

# Electric Railway Journal

*Consolidation of Street Railway Journal and Electric Railway Review*

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## No Magic in Operation of an Electric Railway by Municipality

THE city fathers of Seattle have found, as they were bound to do, that a nickel is a much smaller coin than they supposed when they contended that it was plenty for a local car ride. They now think that the dime is more appropriate, which it is, in view of the present purchasing power of this coin. Of course in Seattle riders who purchase tickets will be charged a considerably lower fare for the present, but with a base fare of 10 cents the ticket rate can be varied readily to produce the required income. Our conviction is that the present ticket fare of 6½ cents will not be found adequate. At any rate Seattle has cut loose from the nickel. Recent difficulties in meeting the payroll made the urgency of doing this very apparent.

In Seattle the electric railway department is to be forced to pay its own way. No taxation of the general public for the benefit of the car rider is to be permitted. As the monthly budget for railway operation comes up for consideration by the City Council, the estimate of receipts will appear in close juxtaposition thereto. This is well, for if the ratio of operating cost to income were not kept clearly in view there might be a tendency to give service below cost, at least for a time. Seattle will find, as the railway company in nearby Portland has done, that once the weird spell of the nickel has been broken the fare can be readily adjusted without public resentment. In Portland it was much easier to go from 6 to 8 cents than it was from 5 to 6 cents. Naturally the fare boost in Seattle has given fresh hope to neighboring utilities that are struggling along under the handicap of inadequate income. It will no longer be possible to cite this city as an example of how good management can make ends meet with the nickel.

## Research—an Asset to Electric Railways

A RECENT bulletin of the National Research Council contains a list of 300 industrial firms that have research organizations. These firms are engaged in all phases of industry and range from Sears, Roebuck & Company to Stone & Webster and the Detroit Edison Company. If research organizations are not profitable elements of business in a productive sense, then why are their numbers increasing so rapidly?

If a central station, hardware manufactory or mail order house finds a research organization an asset to its business, it seems there might be in the railway industry opportunity—or perhaps we ought to say more opportunity—for such organizations.

The existing personnel of most railways is fully occupied with the direct business of conducting transportation. The number of executives is a minimum in the present precarious condition of the industry and each executive has little time to investigate ideas or equipment that might or might not be successful. Every man

has detailed and exacting duties assigned him essential to the routine operation of the system. The superintendent of the power house, shop, carhouses, lines, etc., cannot take time to study details of untried new methods or to make experimental researches in their respective fields.

A research department is the missing element in such an industry, as its duty is to carry out the suggestions of the superintendents and furnish the experimental and engineering skill needed to develop new methods in the industry. The research organization has no executive duties, is not directly occupied in conducting transportation, yet might prove the element needed to change failure into success.

An industry working under financial handicaps and with a great variety of unsolved problems, such as the railway industry, cannot afford to miss any opportunity for improving conditions, and a research organization will ultimately be a part of all large railway organizations. Modern industry has proved that new development is the keynote to success.

## "Times Change and We Change with Them"

DURING the war the War Labor Board made numerous wage awards in the electric railway field which very nearly sapped away the life blood of the companies affected. These awards were based on the principle that the ability of the company to pay formed no part of the considerations leading to the determination of a fair wage. The awards in many cases were entirely beyond the ability of the company to pay, and while the whole industry remonstrated against the principle pronounced by the board, yet the companies responded to their patriotic duty and operated at a loss.

But times have changed. During the last few months we have seen an exactly opposite manifestation of the obligations of the railway in this matter of wages to its employees, particularly in the Middle West. At Des Moines a few weeks ago a federal judge reviewed the decision of an arbitration board granting substantial increases in pay to employees of the Des Moines City Railway for the purpose of directing the action of the receiver. The judge ordered a rate of pay 10 cents an hour less than the arbitration award and made any further pay subject to the ability of the company to pay, after the obligations for other operating expenses, maintenance, depreciation and fixed charges had been deducted from the net.

In Akron more recently an arbitration of a wage dispute on the properties of the Northern Ohio Traction & Light Company brought a decision in which the increase in wages granted was made contingent upon an increase in fares sufficient to meet the operating expenses. While the men were in accord with this finding, they later went on strike in Akron and Massillon in order to force the local city councils to understand that



they must acquiesce in a fare increase in order to enable the company to pay the men a fair wage—and they did.

In Dubuque the company was unable to pay the wages demanded because the city authorities would not grant an increase in fare to cover the increase in operating expenses which would result and the men struck. After sixty days, in which not a wheel was turned, a federal judge brought an end to the deadlock by setting aside the 5-cent clause in the franchise, permanently enjoining the city from imposing this franchise provision as to a fixed fare, and established an 8-cent fare, subject to later review, in order that the company should be able to meet the demands of its men. If we assume that the position of the company that it could not pay the wages asked on the rate of fare in force was well founded, this again was recognition by a federal officer that money cannot be paid employees that is not earned, or that a railway company cannot be expected to continue indefinitely to operate at a loss. Other cities in which the same principle has been expressed or upheld in recent wage and rate negotiations are Minneapolis, Buffalo, New Orleans, Duluth, Davenport and Rochester.

In fact, it may be said that the whole trend of utility regulation is now to make rate revision closely follow, if not actually anticipate, necessary increases in the wage scales. The general tendency to recognize the direct relation between rate of wage and revenue is also the very essence of the service-at-cost type of franchise, which is now the form of grant almost universally considered whenever a new arrangement between company and municipality is brought to the fore. All of these situations point unmistakably to the fact that there has been a decided change in the interpretation of the relation between earnings and disbursements—if the rulings of the War Labor Board could be taken at any time as an expression of the common sense of justice.

### Loyalty of Employees an Encouraging Sign

**A**N ENCOURAGING result of this condition which we have just described is the closer feeling of interest and co-operation which is apparent in many recent cases between management and men. We have already referred editorially, under the titles "The Coaches Cannot Do It All" and "There Are Teams Now at Work," to certain conspicuous instances of loyalty of the kind mentioned. Most noticeable of these is probably the recent action of the employees of the Philadelphia Rapid Transit Company in acquiescing to a postponement of a higher wage scale to which they were admittedly entitled. This case has inspired wide publicity, possibly because it followed spectacular accounts of a disagreement between the financial and operating powers of the company in question. The expression of confidence in the management by the men was a compliment to the success of Mr. Mitten in handling labor.

Yet we hardly agree with the inference which might be derived from some of the articles which have appeared in the daily press on this subject that the incident marks the beginning of a new era of co-operation between management and labor. For, shorn of the colorful circumstances which beget publicity, the employees of a number of other companies in various parts of the country during the past six or eight months have quietly borne with their employers until the latter could place the company in a position to pay an increase. We

have no desire to deprecate Mr. Mitten's accomplishment, but merely wish to point out that this incident is not an isolated example of the new spirit between managements and men. There are several places in the industry where there prevails a very fine spirit of this kind of understanding and co-operation. Even in some cases where strikes have occurred there was no quarrel between the company and its men, but with the hands of the company tied as to ability to pay more wages, the men used the strike weapon as their only means of forcing the necessary action on the part of the municipal authorities. Philadelphia has a good labor situation, but it has not an entire monopoly of it.

### For Good Public Relations the Employees Must Be Boosters

**W**ERE one to go to Marshall Field's store to make a purchase and be confronted with an increased price for a staple, and upon discussing the cause with the clerk would hear this employee of the store say that there was no reason for the increase, that the Fields were a bunch of robbers, were profiteers, were not content with their millions, but wanted to mulct the public out of other quick millions, etc., would this attitude of an employee beget confidence or would it not tend to create a bitter feeling toward the corporation and drive away patronage and support. Also, what would Marshall Field & Company do with such an employee?

Yet it is just that sort of disloyalty that one frequently finds in conversing with the platform men—the one personal contact between the street railway corporation and its patrons. What headway can a company hope to make in bettering public relations with such absence of co-operation—not to say condemnatory influence—on the part of employees?

Every company needs to better its public relations. The place to begin work and to continue work is with the employees. This should never be lost sight of, for the attitude of the employees toward the company is a tremendous force in the psychology of public sympathy and understanding.

When a passenger boards a car and says, "What about this fare increase, Conductor; does the company really need it?"—imagine the vast difference in reaction toward the company in whether that conductor answers, "You bet it does; it's costing us a third of a cent out of our own pocket every time we give you a ride for 5 cents," or whether he says, "Oh, I don't know; they say they do; but if they didn't have a bunch of ignoramuses up in the main office I guess they could get along." And just that superficial remark on the part of an employee is all that is needed to convince a great many people that the company is sincere in its contention for a higher fare or is misrepresenting for the sake of the "bloated bondholders."

One of the principal objections to municipal ownership is the tremendous force that could be used for political purposes of the large numbers of employees required on a street railway property. Why not take advantage of this force to strengthen the company's position in the community served? It can be done if a sincere effort is made to inform the employees continuously on the company's finances, its earnings, where the money goes, what is being done to improve the service—in general, what a really great interest the company has in providing good service.



A spasmodic or short-lived effort along this line will not be very fruitful. But to make the work of informing employees and inspiring in them some pride in the company and its ideals of service a part of the regular business, just as is the inspection of equipment or the auditing of conductors' returns, will surely yield a tremendous influence toward obtaining satisfied patrons, and contented employees as well.

### Why Cannot Railways Here as Well as Abroad Electrify?

**I**S AMERICA to be recognized as more conservative than foreign nations in its reconsideration of problems of electrification of steam railroads after the war?

The family man who has been waiting during this period of hostilities for a time when he could build for himself a home is still cognizant of the fact that materials and labor are high and scarce. "Wait for better times," is his motto.

The manufacturer, desirous of expanding his business, or even of placing it upon a firm financial status, after having devoted his staff and equipment to specialized war products, finds either that new capital loans are prohibited by the Federal Reserve Board or his credit is questioned and rates of interest are abnormally high. "Not just yet," is his final slogan.

The steam railroads, involved in the throes of experimentation with the federal act which returned them to private ownership on March 1, 1920, and the problem of meeting the recently awarded increase of wages from the Labor Board and of renewing and rehabilitating their equipment, say "Possibly later, but not now."

And yet simultaneously we read, in our contemporary publications abroad, in the reports of the annual meetings of British railway companies such items as the following:

The London & Northwestern Railway appropriated £150,000 for widening its line between Chalk Farm and Willesden for electric service, and work of completing the electrification of suburban lines, postponed during the war, is in progress. The London & Southwestern Railway has decided to supersede the present electrical equipment of the Waterloo & City underground line with modern equipment and to extend the length of the trains at a cost, including additional cars, of £750,000. The Great Eastern Railway has authorized its general manager to prepare a scheme for the electrification of its lines. The London, Brighton & South Coast Railway, which has been operating its minor suburban trains electrically for some years, is encouraged to hope that at an early date the company may be able to electrify its lines throughout the whole of its suburban area. The Lancashire & Yorkshire Railway directors have recommended that the line between Manchester and Oldham, and on to Shaw and Royton, be electrified. The Great Western Railway is electrifying the Ealing & Shepherds Bush Railway. The North Eastern Railway has under consideration proposals for the electrification of the main line between York and Newcastle, 80 miles.

We must all admit surprise at reading last month in our own press of the gigantic loan of \$25,000,000, at an interest rate of 8 per cent, financed by American agencies in order that the Swiss railways might be further electrified at once.

Editorial columns of our daily papers were for days discussing the causes and practicability of the high interest rate paid. The fact remains that it was paid. These steps are being taken by governments certainly no better off financially nor with respect to labor conditions than ourselves.

Are we not inclined to look upon electrification as an untried luxury rather than a well-worked-out economy? It has proved to be economically applicable to practically all railroad conditions, *i.e.*, tunnels, terminals, difficult mountain grades, through-passenger trunk-line service and heavy freight traffic. It is generally recognized as a means of conserving coal, labor and equipment. It makes very effective use of the water power which should now be readily developed upon a large scale in this country. Is it not a problem to which we must necessarily turn as the solution of some of our present difficulties of railroading instead of an ultimate goal to be coveted for some future and better day? We commend the electrification of steam railroads to our readers as an immediate need in this period of reconstruction.

### Who Will Regulate the Improved Highways?

**T**RANSPORTATION has many agencies and each must earn a return on its investment to exist. Two complicating elements enter into a practical application of this principle, a determination of the investment and of who pays the return.

A single airplane used for transporting a few passengers a certain distance affords an example of a simple case where the investment is easily ascertained and the cost of service easily divided among the passengers and collected, but a glance at court records shows how complicated in application the principle becomes when applied to railroads and railways.

The recent advent of the motor bus and motor truck as agencies for transportation has now opened a new field for legal and engineering work to determine these items. The farmers along a state highway who have paid one-third of the cost of a good road, the county which has paid another third and the state which has paid the other third, all on the plea most suited to get the money from each, are beginning to look with new and selfish interest at the question of transportation. The farmer who gave his money to get a road so he could haul his crops to market and avoid freight rates kicks and howls because in a short time the road is ruined by heavy trucking from manufacturing plants and because touring automobiles monopolize the road and force him to drive in the gutter, if at all. The state and county object to the high maintenance on the road and accuse the solid-tired trucks and farm vehicles of doing the damage. The touring class objects to the slow movement, congestion and bad roads due to heavy trucking and wagon transportation.

This condition is bringing into being a general idea that some agency must regulate highway transportation and determine on a cost-of-service basis who should pay the bill and what it should be. As one farmer has put it, "I paid for one-third of that road on a mile frontage and am taxed for the other two-thirds, while that steel mill over there only paid for a quarter mile frontage, yet is using it fifty times as much for its trucking."

The problem is complicated by the number of individuals concerned, the interlocking of investments in highways and the diversified rolling stock used, yet it is getting to be of primary importance, and perhaps, when commissions get to working on highway cases, it will be the turn of the steam and electric roads to look on, smile and say, "Go to it."



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

# California and Her Traction—Part I

By Edward Hungerford

IN this article Mr. Hungerford tells the story of active competition between the municipal railway in San Francisco and property privately owned. In his opinion one system must eventually come in the interests of efficient operation.

When one comes to the western edge of the country he finds the entire traction situation considerably different from that in the eastern and middle sections today. If he observe but superficially he will come to a quick decision that most of the tractions in California are doing very well indeed. Their cars seem to be in excellent condition, their tracks and terminals well maintained, their platform personnel of a high standard. Moreover, most of them are still charging 5-cent fares; a very few 6 cents, none that I discovered more than this last figure.\* It looks like the good old days of before the war. And nowhere more so than in San Francisco, where not only is the

5-cent fare still stoutly maintained but a remarkably short headway of the cars at almost all hours. No city in the land has better street car service today; few, indeed, have as good.

If one be thoroughly converted to the theory that competition in transportation is fundamentally necessary to its real success then San Francisco is his apple. In no other community in the United States is there

real competition. Out by the Golden Gate the municipal street railway enterprise, now eight years old and come to some 168 cars and 63 miles of track, no longer is a mere toy, but has become a real street railway system. Two years ago it may be said to have attained its majority; not in years of course, but by the annexation of the whole of Market Street—San Francisco's greatest street—and running three straight miles from the huge ferry house up to the portals of the new tunnel under the Twin Peaks.

I have neither the time nor the desire to go deeply into the policy that actuated the grab of this important thoroughfare, whose interests already were served, and very well served indeed, by several lines of the

\*Since this article was written Seattle has gone to 10 cents.—EDITORS.

A car of the Municipal Railway passing out of the west portal of the Twin Peaks tunnel. This tunnel has just been completed at a cost of about \$4,000,000.





United Railroads, which used and still uses the street as the main stem of its own great system of 275 miles. Many years ago its two tracks in the middle of the street were paralleled for the mile leading from the ferry house up to the beginning of Sutter Street by two more tracks of the old time Geary Street lines. A few blocks beyond on Market Street was the terminal of the Sutter

Street line. It was this line, whose franchises had expired, which was taken over by the city of San Francisco as the nucleus for its proposed municipal street railway system, which then hardly passed the formative stages. It built additional tracks in Market Street to link Sutter and Geary Streets and began running the Geary Street cars through to the ferry house.

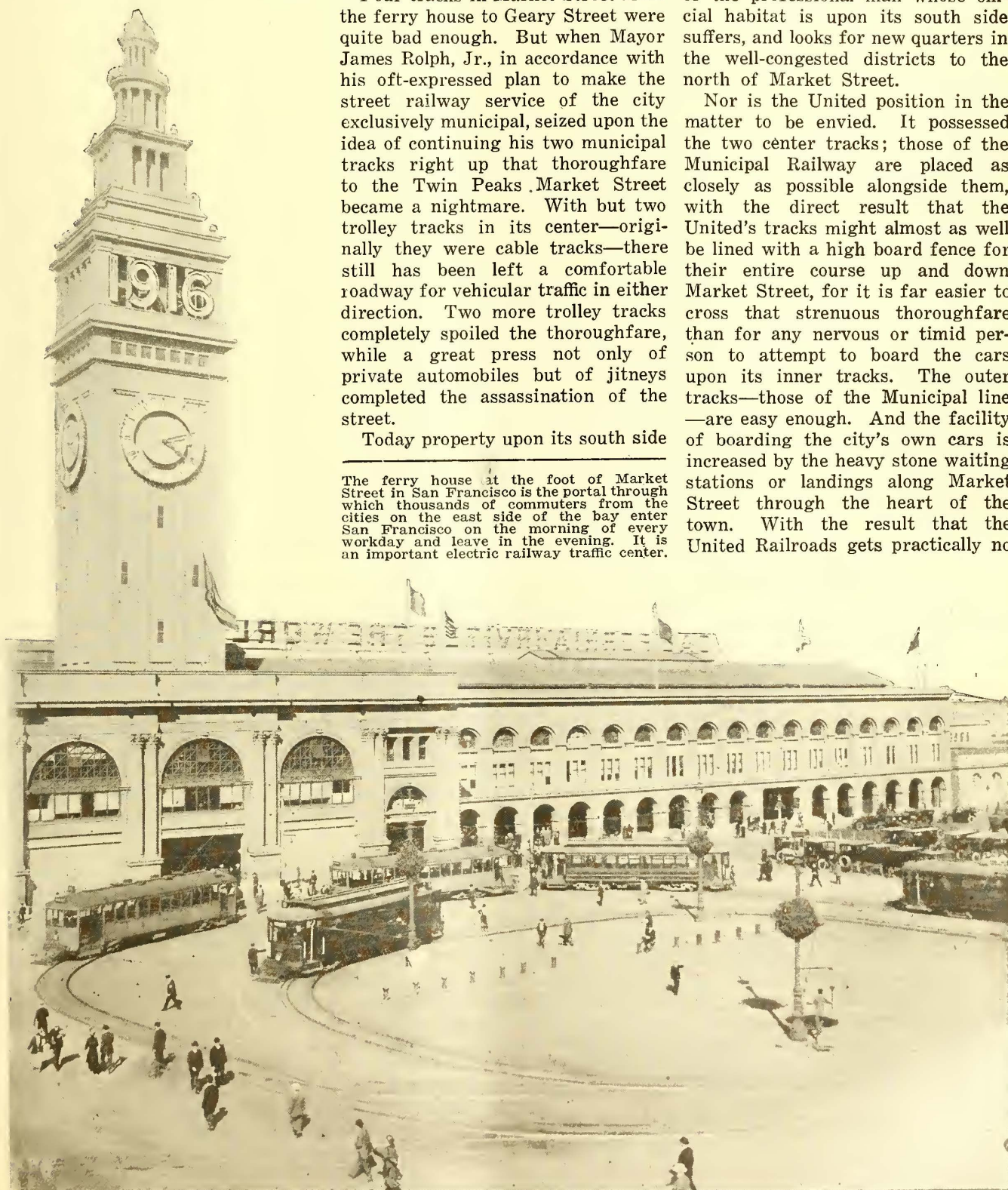
Four tracks in Market Street from the ferry house to Geary Street were quite bad enough. But when Mayor James Rolph, Jr., in accordance with his oft-expressed plan to make the street railway service of the city exclusively municipal, seized upon the idea of continuing his two municipal tracks right up that thoroughfare to the Twin Peaks, Market Street became a nightmare. With but two trolley tracks in its center—originally they were cable tracks—there still has been left a comfortable roadway for vehicular traffic in either direction. Two more trolley tracks completely spoiled the thoroughfare, while a great press not only of private automobiles but of jitneys completed the assassination of the street.

Today property upon its south side

The ferry house at the foot of Market Street in San Francisco is the portal through which thousands of commuters from the cities on the east side of the bay enter San Francisco on the morning of every workday and leave in the evening. It is an important electric railway traffic center.

—across the tracks from the chief shopping and hotel and theater district of the town, its best residential districts, too, is virtually marooned. The descending values of that side of the street tell the story. Store after store stands empty. Office after office is the same. Folk will not risk their precious lives and limbs in crossing that bedlam. So they do not cross, and the merchant or the professional man whose official habitat is upon its south side suffers, and looks for new quarters in the well-congested districts to the north of Market Street.

Nor is the United position in the matter to be envied. It possessed the two center tracks; those of the Municipal Railway are placed as closely as possible alongside them, with the direct result that the United's tracks might almost as well be lined with a high board fence for their entire course up and down Market Street, for it is far easier to cross that strenuous thoroughfare than for any nervous or timid person to attempt to board the cars upon its inner tracks. The outer tracks—those of the Municipal line—are easy enough. And the facility of boarding the city's own cars is increased by the heavy stone waiting stations or landings along Market Street through the heart of the town. With the result that the United Railroads gets practically no





opportunity whatsoever at the fine short-haul business which comes at all hours between that heart and the ferry house, which is virtually the exclusive portal of the great communities of Oakland and Berkeley and Alameda, across the bay, some 300,000 folk all told.

#### CABLE CARS STILL RUN IN SAN FRANCISCO

San Francisco is the city of the short-haul rider. Her most peculiar conformation has made this possible. Long ago her great hills bade defiance to the growth of the town.

Wall Street of San Francisco, tell you to run up to the Pacific Union Club for a bite of lunch with him? Presto! You hop aboard one of the gaily painted and caparisoned little cars of the California Street Cable Railroad, whose equipment has not been changed in style or appearance for nearly forty years, and the gay little car hauls you up four or five fearful city blocks, at a grade of from 18 to 20 per cent for most of the way. The little cable road looks obsolete. On the contrary, however, it is very much of a going institution, paying 7 per cent on a fair capitaliza-

tion in the city by the Golden Gate is not nearly so easily solved as that of the mere mechanical means of propulsion. For, as most traction men already know, it is there that the municipally owned and operated street railroad has attained its stoutest foothold in all the United States. I have referred already to this second distinctive feature of San Francisco street transportation in its connection with the most difficult Market Street situation. Now consider for a moment or two how it has attained its real strength.

#### HOW THE MUNICIPAL ROAD BEGAN

The Geary Street line, which was its first link, was in the beginning also operated by cable. Its franchise rights expired a little more than eight years ago, and the city, taking over the street to itself, announced that here would be the beginning of its municipal railroad experiment. It paid nothing for the existing property of the old company, but pulled out the cables and scrapped its cars and tracks, replacing them with a brand-new electric line, running from the ferry house—the great head and front of San Francisco trolley traffic—right through to the ocean; some nine miles all told. The old cable road had had its downtown terminus right at Market Street. That did not satisfy the city administration. Its traffic sense said that the line must run through to the ferry house. And so it bended it right into Market and by new trackage to the existing four tracks for the short distance between Sutter Street and the water-side. The outer tracks for this short distance belonged to the United Railroads. But the city administration did not quibble at that. Nor hesitate. It appropriated them for its own purposes, and the assassination of San Francisco's chief business street was begun.

Translate "city administration" into Mayor Rolph, Jr., who has been the alcalde of San Francisco for four terms now, or the eight years in which the municipal railroad enterprise has been in existence, and you begin to get the right understanding of the whole situation. With no desire whatsoever to write a treatise on San Francisco politics, permit me to say that Rolph frankly is a labor union mayor. A rich man himself and keenly successful, he makes no hesitation in saying that he represents labor and the things for which labor stands there in the fine new city hall, and rarely fails to be consistent.



One of the first cable cars to operate in San Francisco (reproduced from an old photograph). In the panel is a portrait of Andrew S. Hallidie, who built the line on Clay Street, the first cable line in San Francisco.

They seemed an impassable barrier to its development. And so as it grew it struggled for a foothold on the narrow sand stretches around their bases—until the day came when a genius of an engineer laughed at Nob Hill and Russian Hill and promptly proceeded to overcome them.

What, haul street cars by a rope? Of course, replied the genius. His name was Andrew S. Hallidie, and he was just a plain, ordinary sort of man, even as you and I; yet a man with a very real idea. Because it was a real idea it presently came into being. And San Francisco was the first city of all the world to ride upon a cable railroad. That was in 1873. It has been riding upon them ever since.

Does your friend the banker down in California Street, which is the

tion and putting aside \$20,000 or \$25,000 a year in cash surplus. It takes off its hat to none of its larger brethren.

Nor is the cable car of San Francisco apt to doff its chapeau to its bigger and more powerful brother of the trolley at any time in the immediate future. Even the most optimistic of electrical engineers shake their heads at the idea of propelling street cars over 20 per cent grades in 100 per cent of safety. So San Francisco, like Seattle, bids fair to continue the unique method of street transportation to which it gave birth. And these two cities are the only ones in the entire United States to cling to the method of propulsion that once swept like wildfire all the way across the land.

The problem of eventual control



No better inaugural link for a city municipal railroad could readily be imagined than the Geary Street line. From the beginning it has paid and paid well. It hardly could fail to pay, cutting through the heart of the city's best wholesale and retail districts and then threading a high-grade residential district closely built in for almost the entire distance out to the ocean. With his venture in municipal operation so auspiciously begun, Rolph found little difficulty in summoning public approval to future experiments along these lines.

#### THE MUNICIPAL ROAD GROWS

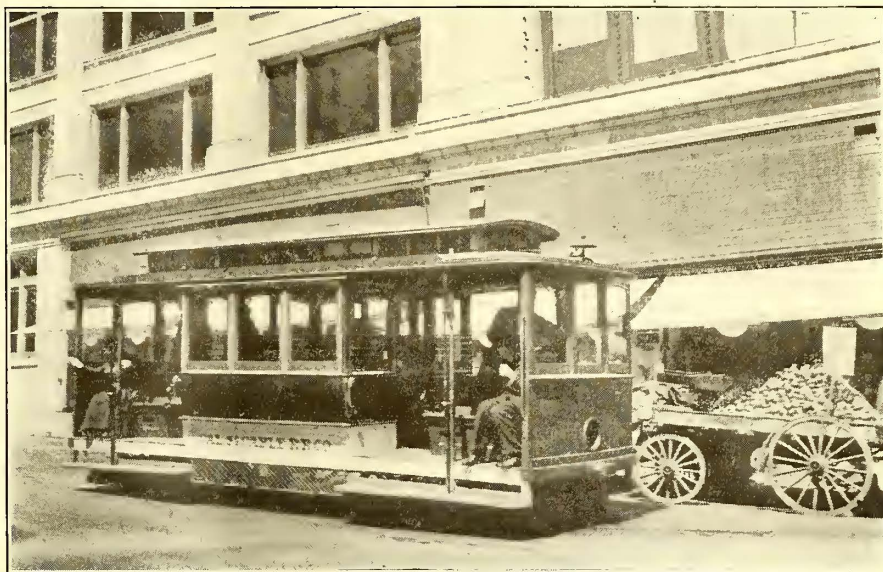
The next of the small independent city railroads of San Francisco whose franchise expired was the Union Street line, running from the Presidio district under and over Russian Hill close to the waterfront and the almost inevitable ferry house. In the days before the great fire of 1906 this too had been a cable road. Yet after that supreme catastrophe electricity was used as power, despite the fact that some of its grades attain 13 per cent, and 10 per cent is regarded by most San Francisco engineers as the maximum for electric power there. The Union Street line was another good thing. The municipal railroad's books responded to its acquisition.

After Union Street came California Street, the section out beyond the cable line, and which was quickly made a branch of the original Geary Street main stem. The coming of the exposition of 1915 made a logical excuse for the municipal railway beginning brand-new construction on its own account; a line was projected the entire length of Van Ness Avenue, linking together Market Street and Geary and Union. Van Ness Avenue originally had been designed as a boulevard. Repeated requests from private corporations to occupy it with tracks had always been sternly refused. And the United Railroads had been forced in turn to occupy the parallel Polk Street, one block to the east.

But what is the city to the city? Mayor Rolph asked Mayor Rolph if the fastest growing municipal railroad could occupy Van Ness Avenue and Mayor Rolph replied to Mayor Rolph that certainly it could. And it did. While soon afterward came the full assassination of Market Street. That thoroughfare was essential to the Mayor's plans. It was neither good traction nor good politics to develop the section north of Market

and completely ignore those to the south. So lines were projected south from the great main street at Church and again at Potrero. To place these in any efficient competition whatsoever with those of the United Railroads Market Street was essential to the Mayor's needs. The United already held the center of that thoroughfare. But the Municipal was upon its sides all the way from Geary to the ferry house. What mattered such a nightmare for another mile or two miles then? So Mr. Rolph's decision. And followed decision with the laying of tracks.

*coup* in the completion of the 12,000-ft. double-track tunnel through the very heart of the Twin Peaks, at a cost somewhat in excess of \$4,000,000. This important engineering work virtually continues Market Street in a straight line through and past what for years has been a seemingly impregnable barrier and opens up a great new section of the city for immediate development. But only for the Municipal Railway. It may and does traverse the great bore at no rental charge whatsoever. The United Railroads may not operate upon these tracks under any consid-



Cable cars are still running in San Francisco. They are used on streets with grades of 18 per cent or more, on which electric cars would not be suitable. This view of a modern cable car shows that those now in operation do not differ greatly in appearance from the original cars of 1873.

Up to this time the Goliath-like United Railroads had confronted the fresh onslaughts of the traction David; not without protest, but without definite action. But the robbery of its exclusive rights the full length of Market Street was quite too much. It began a legal battle against that invasion of its privileges which carried all the way east to the Supreme Court at Washington. There it lost. But the decision which permitted the Municipal Railway tracks to remain in the street also said that the United Railroads might bring suit for any damages which it felt that it had incurred by the invasion of the street by its competitor. This it is proceeding to do. It already places its bill of damages at something in excess of \$8,000,000 and is prepared to press the bill to great lengths—even up to the United States Supreme Court once again if that be necessary.

In the meantime the Mayor of San Francisco has executed another

eration. And, I should add, at this moment is not particularly anxious to do so.

#### WHAT THE FUTURE HOLDS FORTH

Its own future, no matter how large a part of its \$8,000,000 damage bill it may yet gain, is most uncertain. Its important franchises have until 1929 to run. Until then it cannot be ousted from any of its streets in San Francisco. It is today in the process of financial reorganization. Its bonded indebtedness is being reduced to a point at which it is expected a 4 per cent interest can readily be earned. As for the stockholders, I might ask what business a man has being a traction company stockholder today, unless it be in some ancient family affair like the time-honored California Street Cable Railroad. But these do not grow in every civic bush. For verification ask the stockholders of the United Railroads who sent \$8,000,000 in gold out to San Francisco at the



time of the great fire for the rehabilitation of their property so that it might again be serving the citizens of that sore-stricken town.

One might expect the *morale* of a street railroad system which had been so constantly under successful attack to be waning. As a matter of fact the exact opposite is true of the United Railroads. I found by a little investigation that it not only had the lowest labor turnover of any street railway upon the Pacific Coast but, with two noteworthy exceptions, of any industry whatever in that great section of the country. It is well below that of the Municipal Railway. And although its men receive a slightly lower wage per hour than those of the city-owned

achievement of his traction triumph say this themselves. It is only the bitterest of radicals who demand that the old private corporation be clubbed entirely to death and that its property be paid for at junk rates—if ever paid for at all. Better reason tends toward the fair valuation process. And to this the United Railroads is now quite willing to accede.

Today the Municipal Railway has achieved a real success. There is no use in trying to evade that fact, even though one may very much question the methods by which its triumph was attained. It is not extravagantly operated, although the organization recently has been eating into its depreciation account—\$116,000 for the year ended June 30, 1919;

times in the past, the fact remains indisputable that it was and still is a genuine servant of San Francisco, serving it in good seasons and in bad. And faithful servants are not generally turned away merely because they have become broken.

Will the Municipal Railway be able to continue, despite rising operating costs, at a 5-cent fare?

That is another and a very different question. With the steady eating into the depreciation account—which, as we have just seen, is merely a matter of bookkeeping when there is so generous a depreciation charged off—that problem begins to confront the Mayor and his advisers. I do not believe that they underrate its seriousness. Yet if the keen-minded Mayor of San Francisco, who is very much of a law unto himself, is led at all by the advice of some of the wisest of his associates he will not hesitate at the fare-raising step when the next wage advance—the French would call it a crisis—arises. This bids fair to come in the near future. The men of the Municipal Railway are discontented with their \$5 a day, even though San Francisco is today perhaps the cheapest city in the United States in which to live. But the street cleaners—another arm of the city service—are beginning to get \$6 a day.

Surely it takes more brains to run either end of a trolley car than to manicure the cobblestones or the asphalt? That is what those self-same trolley men are already beginning to ask of one another. Out of such questionings there can come but one inevitable answer—a demand for \$6 a day, or more, which must be met by the City Hall. That is politics. When politics intermingles with actual business strange problems such as this arise. When the Municipal Railway completely swallows the United Railroads they will multiply. Then it will be faced with the necessity of operating not merely lines which are unprofitable because they are remote, but other lines which are unprofitable because they are too closely set together. A decade of competition multiplies street railways and places them, not always for the best public interest but in the strongest strategic position.

These problems the Municipal Railway of San Francisco will yet have to meet and to solve. And upon its method of solution will rest, in no small degree, the fate of other municipal railway projects in the United States. Of this I am very sure.



Looking down Market Street toward the ferry house, which is about three-quarters of a mile distant. This view was taken between Second and Third Streets at a time when there were only two tracks there

system, who are paid \$5 for an eight-hour day and permitted no overtime whatsoever, through their overtime they not only equal but generally exceed the weekly earnings of their civic competitors.

#### ONE SYSTEM MUST EVENTUALLY COME

What will be the eventual outcome of this perplexing dual situation in San Francisco?

I think that this is not very difficult to foresee. The Municipal Railway, young and triumphant in its strength, must acquire the lines of the United Railroads; preferably in the very near future rather than to wait for the 1929 crop of expired franchises.

If the city of San Francisco is fair—I am not saying a word about generosity—it will pay for those lines at a fair valuation. The men who personally have been of greatest aid to the Mayor in the

probably some \$400,000 for these next twelve months.

"But," reply its managers, "steadily and for years past we have annually charged off 18 per cent of our gross receipts as depreciation. How many traction systems are doing that today? We have more than \$1,500,000 in accumulated reserve. Out of the \$5,500,000 in bonds which we originally issued for the construction of this property we have retired \$600,000, and the bond issue represents 18 additional miles of line, builded at a cost of \$60,000 a mile, in addition to the 45 miles that it was originally supposed to carry."

They make a good case for themselves, these managers. And with so good a case, such confident strength, they should, and I believe in the long run they will, make not only a decent but a very fair bargain with the United Railroads. No matter what may have been the shortcomings of that property at



# Rerouting in Akron Saves \$60,000

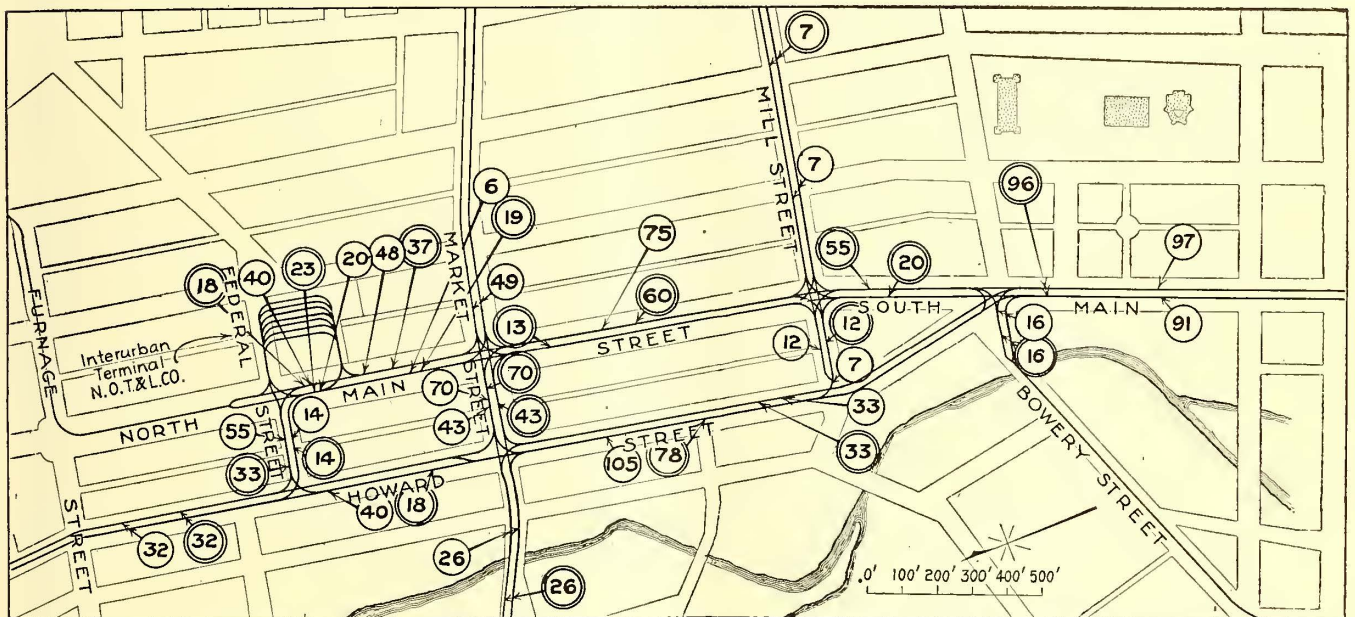
Installation of Some Through Routes and the Shifting of Others in the Downtown Section Result in the Speeding Up of Cars

A PLAN of through-routing certain lines and rerouting others in the downtown section of Akron, Ohio, was recently worked out for A. C. Blinn, vice-president and general manager Northern Ohio Traction & Light Company, by J. F. Layng. This plan has been installed and has so reduced the mileage and improved the speed of the cars through the congested section of the city that a saving in operating expenses of from \$60,000 to \$75,000 a year is expected to be realized. The plan of rerouting and the extent to which it changed the maximum number of cars per hour over any section of track may be seen in the accompanying map of the

result of the completed plan. On the original of this map the data for conditions before and after rerouting were entered respectively in black and red ink, making the references simpler than in the reproduction given here.

The more important changes made in the routing were as follows:

The Spicer line, which formerly entered the downtown district from the east over Mill Street and looped back by turning north on South Main Street, west on Market Street, south on Howard Street, and back east on Mill Street, was through-routed with the Wooster



MAP OF AKRON BUSINESS SECTION, SHOWING THE NUMBER OF CARS DURING THE RUSH HOUR ON EACH SECTION OF TRACK BEFORE AND AFTER ADOPTING REROUTING PLAN. THE CARS FORMERLY ON EACH ROUTE ARE SHOWN IN SINGLE CIRCLES, THOSE UNDER THE NEW ROUTING IN DOUBLE CIRCLES.

central section of the city, on which the final results of the rerouting study as to number of cars over each section of track are entered.

To begin with, the number of cars passing over any section of track during the rush hour between 5 and 6 p.m. was compiled and entered on the map, with details of the number of cars from each line contributing to the total. These total figures are shown inclosed in the single circles, though the details as to the lines and number of cars of each line have been omitted in the accompanying reproduction. With this information entered on the map for every block of track it was comparatively simple to see which sections of track were worst overloaded, when the amount of vehicular traffic was taken into consideration. The study to readjust the routes so that these overloaded sections would be relieved and to eliminate dead mileage wherever practicable could then be made.

As the changes in routing were worked out, the new figures showing the number of cars during the rush hour were also put on the map. The figures which appear in the double circles on the map are, of course, the

Avenue line, the Spicer cars thus turning south instead of north at South Main Street and eliminating altogether the dead mileage of this downtown loop. This provided through operation from the Wooster Avenue district to the Goodyear Rubber Company plant and eliminated the necessity for numerous passengers to transfer.

The Lakeside cars, which formerly looped around the same square as the Spicer cars, were through-routed from the south on Main Street to the west on Market Street, with the Rose Avenue line. Northbound these cars operate over South Main Street to Market Street and thence west, but southbound they turn off Market Street at Howard Street, which converges a few blocks further south with South Main Street. The Lakeside cars previously received a large transfer load from the west Market Street cars, but this is greatly reduced with the new operation, which gives a direct line from the Market Street residence district to the Goodrich and Firestone plants.

The Kenmore cars formerly came up North Main Street from the south and looped back through Federal



and Howard Streets. These cars are now turned back at Market Street instead of Federal, thereby eliminating the dead mileage of one square. Another change was the looping of the Barberton cars through the interurban terminal station instead of via Federal and Howard Streets. These cars now discharge their passengers in the terminal, but do not load until after leaving the terminal and proceeding south to a loading point established at the opposite end of the block from the terminal, in front of the Portage Hotel. This routing of the Barberton cars removes traffic interference with the interurban cars entering the terminal and clears the northbound track for the Silver Lake and Gorge Loop cars.

The old and new routing for any line can be traced out on the map by studying the data entered there as to lines contributing to the total number of cars over any section of track.

#### RESULTS OF THE REROUTING

By comparing the corresponding figures in single and double circles it will be noted that considerable reduction in the number of cars during the rush hour has been obtained in several cases. The heaviest traffic under previous routing was over the southbound track on Howard Street, between Market and Mill Streets, and here the number of cars was reduced from 105 to seventy-eight. On Federal Street the westbound traffic was reduced from fifty-five to thirty-three cars, and so on.

The saving in car mileage per day resulting from the elimination of loops and the cutting back of the loop of the Kenmore cars is summed up as follows:

|                         | Number of cars and saving per car | Saving per line |
|-------------------------|-----------------------------------|-----------------|
| Kenmore line .....      | 97 cars x 1,200 ft.               | 116,400 ft.     |
| Barberton line .....    | No saving in miles                |                 |
| Wadsworth line .....    | 21 cars x 250 ft.                 | 5,250 ft.       |
| Spicer line .....       | 154 cars x 2,600 ft.              | 405,600 ft.     |
| Lakeside line .....     | 153 cars x 3,400 ft.              | 520,200 ft.     |
| Wooster-Rose line ..... | 211 cars x 250 ft.                | 52,750 ft.      |
| Total saving .....      |                                   | 1,100,200 ft.   |

This is equivalent to 209 car-miles per day. If the mileage saving is figured at 35 cents per car-mile and the time gained from relieving traffic congestion and speeding up cars is included the estimated saving is placed at from \$60,000 to \$75,000 per year.

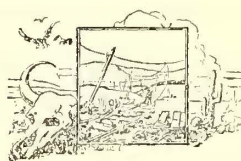
#### Two Accidents Analyzed

A REPORT of the Bureau of Safety, Interstate Commerce Commission, on accidents 639 to 657 inclusive, for the last quarter of 1919, contains reports on two electric railway accidents. The first was a rear-end collision on Oct. 4, 1919, between two passenger cars of the Buffalo & Lake Erie Traction Company, and resulted in the death of six passengers and the injury of twenty-five passengers and three employees. The rear car was an interurban car, whose forward bumper was 18 in. higher than the rear bumper of the local car and overlaid the latter. The report says, in part: "Investigations also develop that it is not required that red lights be displayed on the rear of the local cars, it being believed by the officials that the white lights in the rear vestibules and the reflection of the ceiling lights are sufficient protection against following trains. The assistant general manager stated that the officials endeavor rigidly to enforce rule 84, requiring trains running in the same direction to keep at least 1,500 ft.

apart. The absence of a red light or marker on the rear of car No. 400 undoubtedly contributed in a measure to the accident."

The second accident reported was a rear end collision on Dec. 21, 1919, between two electric motor cars on the Detroit United Railway, resulting in the death of one employee and the injury of two passengers. According to the report of the commission, "this accident was caused by the failure of the motorman of the following car to have his car under control when approaching the scheduled meeting point for his train. While there is no evidence of anything having been wrong with the air brakes, had there been anything wrong and had the motorman complied with this rule (to test air brakes 1,500 feet ahead of junctions, crossings, etc.) he would have been able to stop his car in time to avoid the accident."

#### Western Electric Continues Its Series of Industry Advertising



#### Cause—Starvation

Whether it's a broad-backed ox or a street car line, we've got to keep feeding it or the thing will lie down and die.

Bones whitening in the sun or a car track broken and grass-grown may lend color to the landscape, but they mark the loss of a valuable worker.

Let's decide first whether we need the worker. If we do, then surely it is a long-run economy to pay what the work costs and so make certain of continued service.

Thus, in our daily comings and goings do we need the street railway?

Some say, "No, it isn't worth the cost." Others say, "Yes, but the fare is plenty high enough."

There are arguments for and against, and obviously each case must be settled on its merits. But while talkers talk and investigators investigate, one pertinent fact remains—

For lack of resources to keep going, 450 miles of track have recently been abandoned, 608 miles dismantled and junked, and 4802 miles placed under receiver's management.

This is the interesting answer which fourteen per cent of our street railway mileage gave to the question, "Are the people paying all that a car ride costs?"

Those who live along an abandoned car line have the chance to consider in a new light whether the street railway was necessary in their daily life.

For most of them, getting down to the office, the shop or the theatre has become an added expense in time and money. Their homes are less desirable in location, and therefore worth less.

Should the question of higher fares become a burning issue in our town, an eye to this side of the story will perhaps help us determine what is fair for all concerned.

**Western Electric Company**

No. 15 So completely does this organization serve the electrical field that every time you call up your grocer, switch on a light, or take a street car down town, the chances are you are making use of Western Electric equipment.

"GOOD WILL" ADVERTISING

tect and engineer. One of the street railway advertisements is illustrated herewith.

As the purpose of these advertisements, in the words of the president of the Western Electric Company, is to "change public prejudice into public trust," the company offers to furnish electrotypes of these advertisements in any size upon request to utilities for use in their local papers, or permission will be granted to use the copy in any way desired, either with or without a reference to the Western Electric Company's name.

THE Western Electric Company, whose campaign of education in the interests of the electrical industry during the first part of this year was mentioned in the issue of this paper for Feb. 7, is continuing this praiseworthy effort. A new series of ten advertisements, whose purpose is to promote the public good will and understanding of public utility problems, has been prepared and during the last half of this year will appear in eleven popular publications. Two of these advertisements relate directly to the electric railway industry, while others argue the case of the central station, telephone company, steam railroad, contractor and archi-



# Battery Cars Changed to Safety Cars

Conversion of Fifty Storage Battery Cars to Safety Cars for One and Two-Man Operation by the Third Avenue Railway, New York, for Use in Outlying Districts Presents Some Interesting Features

By R. H. PARSONS

General Foreman Third Avenue Railway, New York, N. Y.

**T**WO PROBLEMS, both important, are being solved by the Third Avenue Railway, New York City, with the reconstruction of fifty cars, formerly operated by storage batteries, to one-man safety cars equipped for service on 550-volt overhead lines. First, the withdrawal of the storage battery cars from some lines and an overabundance of battery cars to serve the remaining lines made these car bodies available for reconstruction. Second, the developing of short-haul riding and the habit of riding in certain districts where the lines served principally as feeders for rapid transit lines was necessary. As described in the *ELECTRIC RAILWAY JOURNAL* for May 18 and Aug. 10, 1918, the Third Avenue Railway began

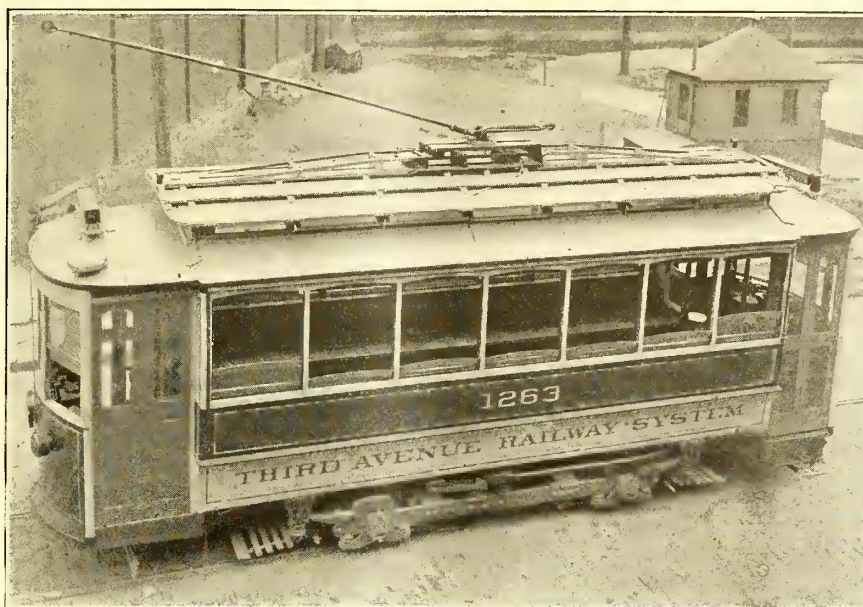
operation with converted safety cars with this object in view more than two years ago. Twenty-five cars, each weighing 26,000 lb. light, were put into service, equipped with foot control and safety devices for one-man operation. These proved very successful and resulted in a marked increase in the number of passengers carried. A year later fifty standard closed cars, weighing 30,000 lb. each, were equipped with foot control and pneumatically operated doors and were used as one-man or two-men cars as desired. These also gave perfect satisfaction. From the results of this operation it was evident that many of the lines which previously had not been considered as paying propositions could be made at least to pay expenses and others could be turned into revenue-producing lines by the use of smaller cars operated by one man on short headways.

This led to the reconstruction of two of the older storage battery cars into safety cars as sample equipments. New trucks and new equipment were installed and changes made in the car body construction as were necessary for this operation, and the final result is shown in the accompanying illustrations. Additional cars to make a total of fifty are now being reconstructed as rapidly as possible.

The first difficulty encountered in changing these cars

from battery operation to trolley was the fact that the car body and roof were not of a sufficiently strong construction to sustain the weight of a trolley base. This was overcome by reinforcing the roof with a 1½ in. x 1½ in. angle, bent to fit the shape of the corner post header, ventilator end pillar and end rafter,

as shown in an accompanying illustration. An additional truss running the length of the car was also installed, which was well fastened at each corner of the car and made fast to each side post. In the illustration showing this construction a fair idea can be gained of the method of wiring. As much of the wire as possible was placed behind the sign panels, molding, etc., as the experience of this company has been



FINISHED CAR WITH TRUSSED TROLLEY SUPPORT, FOLDING DOORS AND STEPS AND LATEST DESIGN OF SAFETY TRUCK

that less trouble results and a much safer installation is provided by this method than in any other way, even when the wires are installed in conduit. This arrangement is also much lighter than conduit construction, which is an essential factor in this equipment.

The illustration of the completed car shows the construction of the trolley base supports, which are trussed so as to give strength to the roof, to provide support and insulation for the trolley base, and at the same time to leave a convenient and protected place for the fuse box and choke coil for the lightning arrester. The choke coil is installed underneath the support for the trolley base and the fuse box is installed at the end of this support. The roof board is arranged for two trolley stands and poles, but one, however, is used at present.

## SUBSTANTIAL SUPPORT FOR EQUIPMENT PROVIDED

In addition to the reinforcement provided inside the car and on the roof an angle iron framework is added underneath the car body. Some details are shown in the view of the underneath car body construction. The storage battery car truck as originally used consisted mostly of a top frame piece, which was a 3 in. x 5 in. x ½ in. angle. As these battery trucks are not used



with the new construction, this angle was available for the car body reinforcing. It has thus been saved and is bolted to the car body along each lower edge. To these side angles trusses for the car body, the car equipment itself is bolted. Two 3 in. x 3 in. angles are fastened to the inside edges of the side angles to provide substantial supports for the air compressor, the brake cylinder and the control group switch. These also help to tie the sides together. Additional angles running lengthwise on the car body are installed to these cross members to provide support for the equipment in the location necessary. The heavy equipment is thus supported entirely by this angle framework independent of the car body. As the body end and center spring caps are bolted directly to the side angles the weight of this supporting framework, together with the equipment parts, is transmitted directly through the end and center springs to the truck. The truck used is the standard Brill No. 79-E with 24-in. wheels.

The control and operating equipment for the car is of a new type designed by J. S. McWhirter, superin-

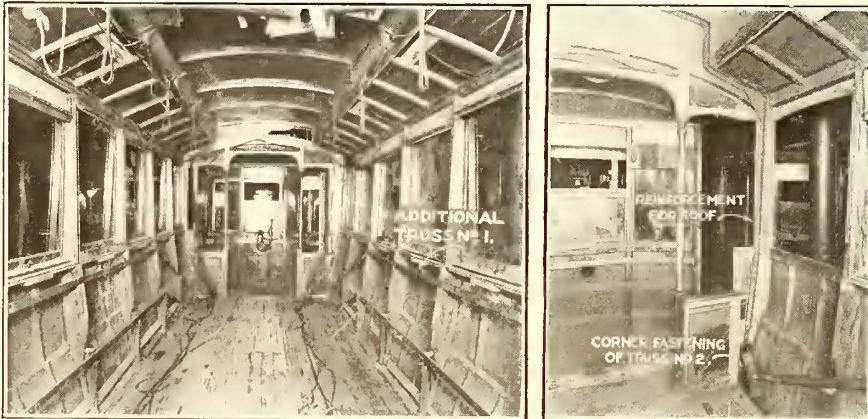
verse. The three points used for forward movement are, first, a position with the two motors in series and all resistance in circuit; second, a point with both motors in series and all resistance cut out, and, third, a full parallel position with all resistance cut out. The closing of the circuit for the operation of the various switches in the switch group is accomplished by pushing down the foot pedal by the operator. Thus, to operate the car forward, the handle of the selector switch is placed in any of its three positions, according to traffic conditions, and the operator by pushing down on the foot pedal then closes the auxiliary control circuits and the car will automatically accelerate to the speed desired and the car will continue to run at that speed until the handle of the selector switch is placed in another position, at which time the control will adjust itself to the changed position.

Of the three reverse points on the selector switch the first two are the same as the first two for forward movement, except of course that the car will run in the reverse direction. The third point, however, is an

emergency one. In this position the circuits are established for bucking the two motors. Line voltage is entirely cut off and the circuits are closed, so that the counter electromotive force will cause one motor to act as a generator, through the various windings of the other motor, and thus provide an emergency means for stopping the car should the air brakes and power fail. This position of the handle for the selector switch is mechanically interlocked, so that when the handle is once placed in this position it must remain there until it is unlocked by pulling down a short wire which projects from underneath the selector switch. To return the handle to its

"off" position this must be unlocked and held in the unlocked position with one hand, while the other hand returns the handle to the desired position. This feature is to avoid the possibility of operating in and out of this emergency point, as there is danger of burning the controller contacts should the circuit be closed or immediately opened before the car stops.

The contacts in the selector switches close the circuit for operating the group switch, which consists of five contactors electrically operated. These contactors close the main circuits for the series and parallel positions of the motors and for the cutting out of the main motor resistance. The "on" movement of the various contactors in the group switch is regulated by a sequence switch, which prevents the changing of connections for cutting out an additional step of resistance or for changing from series to parallel position until the current value for that particular point has dropped to a safe limit. This sequence switch, however, is not a time or current limit, but is controlled by the load on the main motors. The sequence switch consists of a small drum which has segments for making contact with fingers similar to the ordinary controller. This drum is operated by a small motor connected in parallel with one of the main motors and drives the drum through a worm gear. The speed of this motor varies with the load on the main motors operating the car, so that the acceleration of this small motor is controlled by this load. The circuits established by the selector switch in

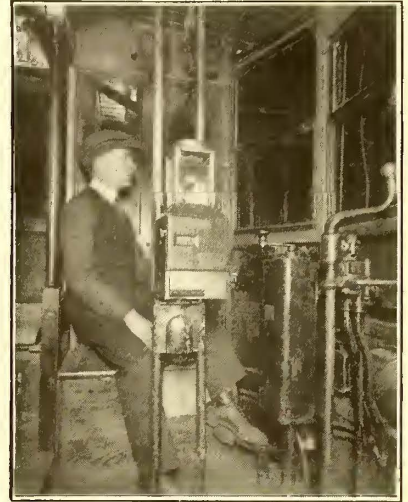
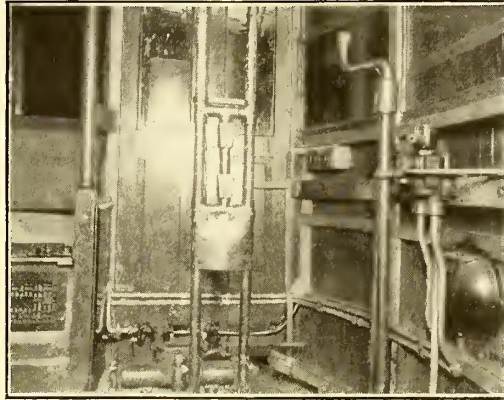
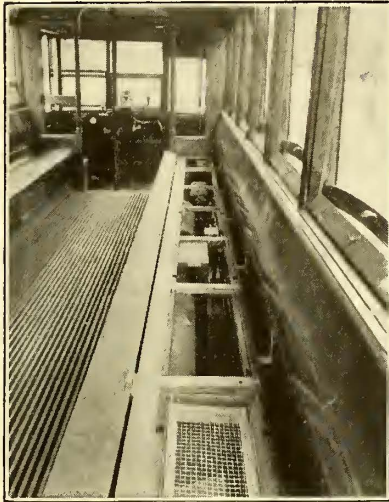


AT LEFT, END AND SIDE TRUSSES USED TO STRENGTHEN CAR BODY.  
AT RIGHT, END TRUSS CARRIED ACROSS CAR TO SUPPORT ROOF

tendent of equipment Third Avenue Railway, and built by the Westinghouse Electric & Manufacturing Company. Its chief feature is the arrangement for foot operation of the control, air brakes and doors so as to leave the operator's hands free for collecting fares, issuing transfers and other necessary duties. All of the well known safety features commonly used for car operation by one man are provided but are accomplished by new methods. The "dead man" feature for cutting off power and applying the air brakes includes in addition to the emergency application of the brakes the exhausting of air from the door operators, so that the doors can be readily opened by hand. Interlocking of door and control circuits also makes it impossible to start the car with doors open or to open them before the car stops. The control and operating equipment consists of the following apparatus: Two 506-A motors, two 33-A selector switches, two 494 control and reset switches, two 503 canopy switches, one 108-B automatic sequence switch, one 801 switch group, together with the necessary rheostats for the control and motor circuits, and the foot attachment to the controller and air brake valve, as shown in the illustrations of the platform equipment.

The functions and the various features of the apparatus will be best understood from a description of its operation. The selector switch, which is more commonly known as a master controller, has besides its neutral position three points forward and three re-





At left, much of the electrical equipment is located underneath the longitudinal seats. In center, the door operator is located opposite the unused left hand door. At right, a box covering for the door operator serves as a seat for the motorman.

LOCATION OF EQUIPMENT UNDER LONGITUDINAL SEATS AND IN VESTIBULE MAKES INSPECTION AND REPAIR AN EASY TASK

turn control the operation of the contactors, so that the acceleration of the car is in reality controlled by its load and the speed at which it accelerates with this load.

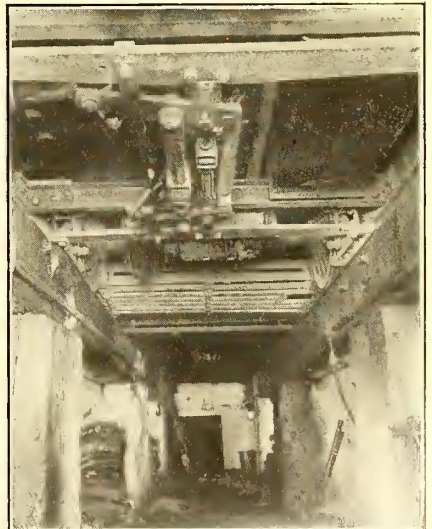
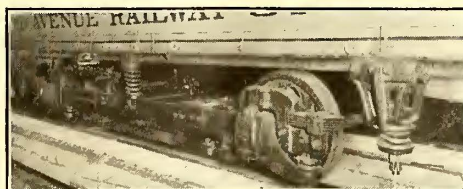
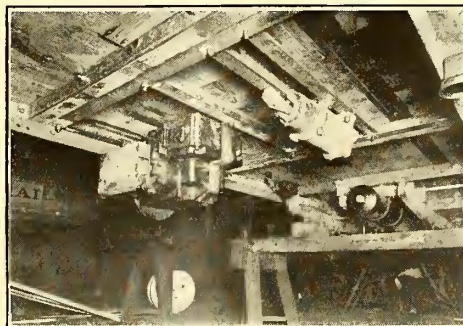
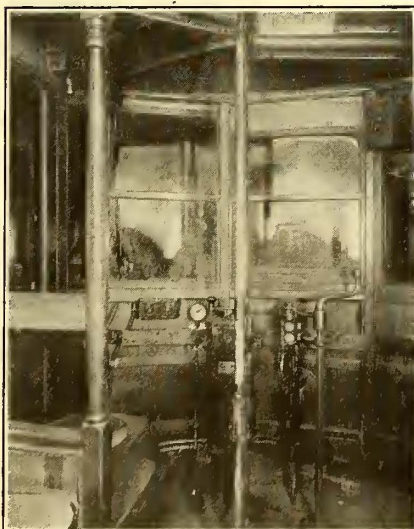
#### FOOT OPERATION OF CONTROL

The foot-control mechanism consists of a pedal hinged so that the front portion operates up and down. The rear end of this pedal is weighted so that the front end is kept normally in its "up" position. Through its mechanical connection to the brake valve and its mechanical and electrical connections to the control equipment with the pedal in its "up" position power is cut off from the motors and the brakes are applied in emergency. The so-called "dead man's" feature is thus provided with this equipment, in a similar manner to equipments having hand operation, except that in this case the emergency application occurs when pressure is released from the foot pedal. This pedal is made so that it will fold out of the way when the operator is not using that end of the car.

By pushing down the foot pedal necessary connections are established for closing the door on the operator's end or both doors if they are open. Interlocks are provided to the doors, so that when they are closed circuits are

established for the operation of the control and the movement of the car. The circuit for opening the door is interlocked through the line switch, so that the doors cannot be opened while power is on, and also through a relay which is operated by the regenerative voltage of the main motors, so that the doors cannot be opened while the car is coasting. This interlocking of the control and the door-operating equipment provides another much desired safety feature, which is that the car cannot be started with the doors open and the doors cannot be opened while the car is in motion.

In the view showing the operating equipment as installed on the platform of these cars two push buttons may be seen just to the left of the selector switch. These push buttons are furnished by the Consolidated Car Heating Company and are arranged for use on 600 volts. Each has its distinctive function. The left push button of the two is for opening the doors. This establishes the circuit through the magnet of the door engine, which is of the National Pneumatic Company's type of electro-pneumatic engine. The push button to the right of this is an emergency button for the operation of the car and it enables the operator to start the car with the doors open by holding in this button. This



AT LEFT, THE FOOT PEDAL FOLDS BACK OUT OF THE WAY WHEN NOT IN USE. TOP, CENTER, HEAVY EQUIPMENT IS SUPPORTED FROM ANGLE IRON FRAMEWORK UNDERNEATH CAR BODY. BOTTOM, CENTER, SAFETY CAR TRUCKS AND LONGITUDINAL ANGLE REINFORCEMENT OF CAR BODY. AT RIGHT, SIMPLIFIED BRAKE RIGGING MAKES SLACK ADJUSTER INSTALLATION EASY



may be used in case a door is inoperative or at other locations where it is desirable to operate the car with the door open.

The air line to the door engine is charged through what is known as a standard Westinghouse "on" magnet, which allows air to enter this line only when the valve is energized electrically. This magnet is connected with the foot pedal and control mechanism in such a way that whenever the air brakes are applied in emergency application or whenever power is lost by the pole coming off the trolley wire this magnet is de-energized and immediately air is bled from the door engine line, so that the doors can be readily opened by hand. Otherwise, with the air pressure on the door engine they are locked and cannot be opened except as controlled by the operator.

#### HAND-OPERATED SANDING PROVIDED

To the left of the operator and convenient for him as he sits on his seat is the sand lever, which is operated by pulling toward the operator. This is within easy reach and as both hands of the operator are free in the major operation of the car sand can be applied as is desired.

Directly above this sanding lever may be seen the end of a bell cord which rings a gong on the roof. As the operator uses his feet on the pedal, hand operation of the gong is essential, also its location on the roof apparently has added advantages in ease of inspection and repair.

Standard straight air brake equipment is provided for these cars. This equipment is not new, and with the exception of the brake cylinder, which is 6 in. x 10 in., the other parts were taken from cars of the company not at present in service. The air brake equipment includes a National A-3 compressor, National type PV brake valve, a Westinghouse type E governor and standard Westinghouse gages. As already mentioned, operation of the brake valve is by means of the foot pedal. These cars are also equipped with standard Peacock type G brakes, with drum sheaves to reverse the motion of the chains. In the view of the car showing the underside completely equipped, the compressor, group switch, brake rigging and a Gould slack adjuster may be seen. The car body brake rigging as installed provides a very simple arrangement.

#### OTHER CONSTRUCTION AND EQUIPMENT DETAILS

On each platform just to the right of the operator are two upright stanchions, which serve as guides for the curtain used to protect the motorman from the light when operating at night. These stanchions also serve as supports for a Johnson fare box. Its location is directly in front of passengers as they board the car and within easy access of the operator.

Other equipment used on these cars are Consolidated Car Heating Company's panel heaters, of which six are provided for each car; Utility Company's thermostat and heater switch for controlling heat regulation, which is standard for the Third Avenue system; a coasting recorder, Hunter illuminated signs and a General Electric electrolytic lightning arrester.

These cars as reconstructed weigh 15,000 lb. and have longitudinal seats which seat twenty-six passengers. At this writing fifteen cars are in service and arrangements have been made for equipping a total of fifty of these cars as rapidly as the equipment can be delivered by the manufacturers.

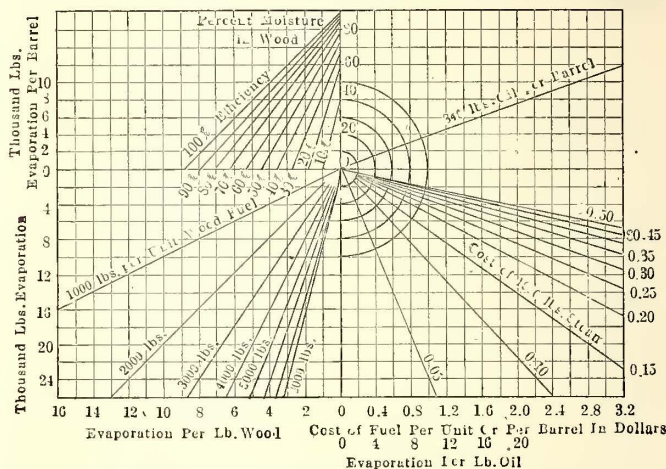
## Fuels to Replace Coal Are Being Sought by Electric Railways\*

Substitutes Were Proposed and Their Relative Advantages Presented in a Recent Paper Before the Portland Convention of A. I. E. E.

BY DARRAH CORBET

With Charles C. Moore & Company, Seattle

SAWMILL refuse, ranging from fine sawdust to large blocks of hard wood, at least 1 ft. square, is available for fuel in power stations in many sections of the country, particularly in the Northwest. Such fuel has been successfully used by the Portland Railway, Light & Power Company. Extensive tests made in connection with the use of this fuel by the latter company are included in the paper. Analyses of the various



CURVES OF COMPARATIVE VALUES WOOD AND OIL FUEL

Evaporation from and at 212 deg. F.

kinds of wood available in such refuse are given, together with their heat units and relative fuel values. An average of approximately 8,500 B.t.u. per pound of dry non-resinous wood is used in the tabulation.

This fuel can be readily stored for a considerable length of time, either in fuel houses or in the open air. There is unquestionably some depreciation in the fuel value of such refuse after storage. Cases are cited, however, of successful use of this fuel after several years' exposure. The amount of ash and moisture was found to be somewhat increased, however. The storage and use of this fuel are not considered to be a great fire risk, and no record has been made of any fire having been started in a fuel house or a pile of fuel due to spontaneous combustion. Few fires have occurred which have destroyed fuel houses.

Although it is probable that better efficiency could be secured with hand firing and special furnace design, in the majority of installations the original furnace is fed in a more or less continuous stream, the fuel being delivered through a hole in the top of the furnace and allowed to pile up in a cone on the grate. Such a method is very economical of labor, as one man can readily take care of several thousand horsepower of boilers in a properly designed plant. Desirable changes in furnace design are included in the paper in considerable detail.

Although there are several methods of determining

\*Abstract of paper presented at Pacific Coast convention of American Institute of Electrical Engineers, Portland, July 21-24.



the available heat value of such fuel, the accompanying diagram showing a comparison between the economies of such refuse and fuel oil is expressed in terms of the calculated total heat in a pound of dry wood. The unit of measurement for such fuel has been rather arbitrarily established as 200 cu.ft. Of course, the weight of the various fuels per unit will vary somewhat.

"As an explanation of the use of the curve we can assume the following conditions and follow through a determination: Oil, \$1 a barrel; 12 lb. evaporation per pound of oil; sawmill refuse fuel, containing 45 per cent moisture, weighing 20 lb. per cubic foot; efficiency 60 per cent. The problem is to determine what can be paid for sawmill refuse fuel per unit to equal the fuel value of oil at the price stated.

Starting with the value of 12 lb. of evaporation per pound of oil, directly above this at the point of intersection with the line indicating the pounds of oil per barrel, we note that on the left the total evaporation per barrel of oil is 4,080 lb. Transferring this below the line as indicated by the semicircle and carrying 4,080 lb. evaporation across to the right we note that over the figure \$1 per barrel the cost of 1,000 lb. of steam is about 24½ cents.

Starting again with 45 per cent moisture in the sawmill fuel and going to the left to the point of intersection of 60 per cent efficiency, we note that the evaporation per pound of wood is approximately 2.3 lb. water, or with 4,000 lb. per unit this is equivalent to about 9,200 lb. of water per unit of fuel. Carrying this to the right to the point of intersection with the line indicating cost of steam 24½ cents per 1,000 lb., we note \$2.25 as the equivalent cost of a unit of fuel.

On the same basis, if oil cost \$2 a barrel the equivalent cost of sawmill refuse would be twice the above, or \$4.50 a unit. In this manner a ready reference is secured and the curve can probably be read far more accurately than will be the assumptions made.

With regard to the use of powdered in place of ordinary coal, the results obtained by several power stations, particularly in the Northwest, are quoted.

At the plant of the Pacific Coal Company at Renton, Wash., about 200,000 tons of sludge coal have accumulated during the past fifteen years, which tested with 20 per cent moisture, 25 per cent ash and about 7,500 B.t.u. per lb. This fuel is practically useless in its present form, but after being pulverized an average evaporation at this plant of 5 lb. of water from and at 212 deg. F. per pound of coal was secured. An evaporation of more than 9 lb. per pound of dry Issaquah screenings containing 11,400 B.t.u. per lb. was also obtained.

As a result of the readiness with which powdered coal can be used in handling overloads, because of the possibility of lighting and putting out fires quickly, it is quite probable that this fuel will be used quite extensively in the future. It is stated that the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., has recently decided to install a powdered-coal burning equipment for a new 40,000-kw. station, to contain eight 1,308-hp. boilers to be operated at 250 per cent of their rated capacity continuously.

Although the problem of using fuel oil in the future is dependent upon the extent to which its cost is likely to rise, the author feels that the installation of oil-burning apparatus, making use particularly of mechanical methods for atomizing the oil, is worthy of serious consideration. This is especially true in the case of

standby equipment. Details are given in the paper regarding five rather extensive tests made by the Babcock & Wilcox Company, making use of Lodi mechanical oil burners in connection with its boilers.

Summing up the information contained in this article it seems probable that it will be necessary to curtail somewhat further developments in the use of oil fuel. This leads to the greater consideration of coal, which will unquestionably be more extensively used in the future, both in stokers and in powdered form. There is a limited field for the use of sawmill refuse, but where it is possible to secure this fuel at approximately present prices it can unquestionably be used to greater advantage, and a more extensive use of it may develop a better and more efficient means of handling and burning it than we have at present.

## Railway Situation Analyzed\*

Investment Bankers' Committee Believes Eventually Electric Railway Securities Will Again Attain a High Investment Standing

THE real question as to the security of electric railway investment is not to be answered by the income statements they have shown. Electric railway securities are a good example of the kind of investment that has suffered most, for the present, from the war's effects. High labor costs, high material costs, high capital costs, combined with a low price for the product, transportation, could not possibly result in anything but discouraging statements. Since electric railroads perform a public service and are subject to regulation, they have not been able promptly to adjust the prices for their product to the cost, as competitive industries have done. Financial statements may indicate the progress that is made in readjustment, but sound judgment as to the real worth of investments in electric railways must go much further.

### THE QUESTIONS AT ISSUE

Intelligent judgment of the future worth of street railways must be based upon the answers to such questions as the following:

Will there continue to exist a sufficient demand for the kind of transportation service that electric railways have furnished?

Is the automobile supplying this service and will it gradually supply the greater part?

Is it possible to charge fares that will pay the operating costs and leave sufficient margin to attract capital?

If there are fares that will do this will the public consent to the increase?

The mere putting of these questions suggests what is actually taking place. The sheep are rapidly being separated from the goats. Unquestionably there are roads, particularly small suburban and interurban lines, which, due to local conditions, are finding that the automobile has taken away sufficient traffic to make the remainder much too small to keep the line alive with any fare possible to collect. It is usually true, however, that these lines are the very ones that were unprofitable even when all conditions were favorable. The first effect of the discovery that there are electric railways that cannot be successful is to create doubt that any can be suc-

\*Interim report made by Russell Robb, chairman of subcommittee on street railway securities of the standing committee on public service securities of the Investment Bankers' Association of America.



cessful, but so superficial a view is sure to be modified and the credit of sound roads is likely to be benefited through a confidence that is the result of intelligent analysis and real conviction.

There is a widespread feeling that since the advent of the automobile the electric road has lost a large part of its traffic. Studies of traffic statistics do not bear out this supposition. There has been a great amount of transportation created by the automobile and it has absorbed a part of the normal increase that would have come to the electric roads, but in city systems particularly studies show that with considerable uniformity electric roads are carrying many more passengers than they did ten years ago, or even five years ago, and are even furnishing many more rides per capita. In many cases this increase has occurred in spite of little increase in facilities because of the difficulty in attracting new capital.

#### TRAFFIC INCREASING DESPITE AUTOMOBILES AND HIGH FARES

In the great majority of places there is every reason to believe that the answer to the first and second questions will prove to be that there will continue to exist a sufficient demand for the kind of transportation service that electric railways have furnished and that the automobile, though subtracting something from what the electric road might have had, will not prevent the electric car business from growing.

Even a very large and a growing business will not bring prosperity with low fares. Costs of everything have about doubled. Doubled fares would be not more burdensome than items every one is meeting at every turn, and very many riders have twice the wages with which to meet them. If doubled fares were paid with the readiness that has been shown in retail purchases, it is safe to say that the street railway business generally would be more prosperous than it has ever been before.

Improvements in operation, however, the use of the light one-man car, the betterment of station efficiency and all the economies stimulated by adversity have made it possible for roads to approach a prosperous condition with considerably less than doubled fares. There was fear at first that increased fares would so reduce the riding that it might not be possible to charge the fare necessary to pay the operating costs and leave sufficient margin to attract capital. This fear is fast disappearing. Agitation and the stimulation of discontent with the increase do of course prevent the full benefit that might be obtained, but the experience has been that though there is at first a considerable decrease in riding when fares are increased the passengers carried gradually tend toward the number that rode before the increased fares were put into operation.

Whether the public will consent to the increasing of fares seems to be largely a question of the political advantages there may be in opposing the increase, and these political advantages depend very largely on local street railway history and the public relations established by the management. The modern street railway operators through frank disclosure of all the facts and a courteous attitude toward the public and its representatives do much to remove old time prejudices and to secure local and official support and fair treatment. The state commissions for the regulation of public utilities have very generally granted increases and there is a

formidable list of cities with fares of 6, 7, 8, 9 and 10 cents now in force. In fact the cities where fares have not been increased above pre-war levels are in a rapidly dwindling list.

#### ULTIMATE BENEFIT FROM PRESENT TROUBLE

It is not unlikely that in the end many electric roads will be found to have benefited from the very severity of the blow they have received. For many years before the war electric roads were suffering from their burdens. Costs had even then risen considerably and returns on capital were low, there were constant importunities to build extensions and to add service, taxes were increased steadily and paving burdens were laid wherever possible. The popular belief that the roads were enormously profitable was so strong that no denial was credited and regulating bodies seemingly dared not judge street railway situations on their merits because of the preconceptions of the public. The last six years have dissipated the fiction. It has become plain to the dullest that a public franchise has no peculiar power to produce surpluses from deficits. The willingness in some cases to abandon lines, in others to sell to municipalities, in others to rest in the arms of receivers have convinced the public at last that, like any other business, there are investment costs, receipts and operating costs, and that these are all determinable. Many state commissions have not only listened without bias to the street railway rate cases but in their decisions have admirably set forth the principles that should be followed in future treatment. The rate cases have established values which from now on will serve as starting points. Service-at-cost franchises are being worked out that will assure the security of the investment and regulate fares so that they will be no more than necessary, but still sufficient to keep the business healthy and progressive.

Your committee hardly looks for spectacular improvement in street railway credit or sudden rise in the values of their securities, but it believes that the change in the public attitude toward the business, the constructive work being done by the commissions, the clearness with which the basic facts of the business are coming to be understood are all working toward secure conditions for the industry and will result finally in income returns which even though moderate will, by their steadiness and surety, give again to electric railway securities their high investment standing.

#### Welding Economies

THE wear of journal boxes used on electric cars is chiefly at the pedestal guides. Frequently these wear entirely through at these points and on many roads the journal boxes are then scrapped. The Chattanooga Railway & Light Company is repairing worn journal boxes by welding  $\frac{1}{2}$ -in. steel chafing plates into the pedestal guides. The cost of repairs made in this manner averages but 50 cents per box, while the cost of a new box would be at least from \$6 to \$10.

Another example of quick repair work done in the shops of this company is the welding of spouts to sand boxes. Extra sand boxes are rarely kept in stock and the replacement of a damaged box ordinarily takes several days. By the use of an Oxweld blowpipe broken spouts are quickly restored and the cost is less than 75 cents per operation.



# Analyzing Kansas City Traffic

## Fourth and Fifth Sections of the Beeler Report on Traffic Conditions Set Forth Limitations on Grand Avenue and Walnut Street and Make Remedial Recommendations

**T**HE fourth and fifth sections of the report by John A. Beeler, consulting engineer, New York, on traffic conditions and methods of improving the service of the Kansas City (Mo.) railways deal respectively with the situations on Grand Avenue and on Walnut Street, both being important streets extending through the business district of the city. The various conditions which combine to slow up the movement of the cars are analyzed and recommendations are made as to changes in the number and location of passenger stops, double berthing, use of elevated platforms, limitation of automobile parking, intersection movement of cars, etc. Similar recommendations were made to improve the conditions prevailing on the streets covered in the first three sections of the report, which were treated in the Feb. 14 and April 3, 1920, issues of the *ELECTRIC RAILWAY JOURNAL*.

Grand Avenue, the street dealt with in section four of the report, is the one wide thoroughfare in Kansas City's business district. The report points out that this roadway is of sufficient width that street cars and vehicles should be able to make excellent progress, but because of congestion at the intersections and the large number of vehicles using the street all traffic is badly impeded. In addition, street cars are loading heavily in both directions when the congestion is worst, and with present loading facilities the stopping time is prolonged. Practically all lines operating on Grand Avenue are outbound and therefore subjected to heavy loading during the afternoon rush hour as they are receiving outbound traffic. The total number of cars passing over this street is not excessive nor is the unbalancing of traffic in the two directions large. The worst conditions exist between Thirteenth and Fifteenth Streets, where fifty-five cars are scheduled northbound and seventy-nine southbound during the hour between 5 and 6 p.m. At the five principal intersections with Grand Avenue, however, there are a total of 946 car movements scheduled during this evening hour, which is partly responsible for the slow speed prevailing on this street. At the Eighth Street intersection there are 241 cars scheduled to pass during the evening rush hour, which is more than at any other point in Kansas City. Yet this intersection is now occupied by cars but 50 per cent of the hour.

In commenting on this situation at the Grand Avenue and Eighth Street intersection the report points out that previous to the Eighth Street changes, described in an earlier section of the report, 203 cars were observed in a maximum hour, while a later count, after the changes recommended by Mr. Beeler had been installed, showed 240 cars passing through the intersection in the same period. This not only represented a gain of 18 per cent but showed that it is now possible to get the scheduled cars through, even though the number of cars making the right-hand turn has increased nearly 100 per cent. As a result of the changes in location of car stops and other improvements for facilitating the movement of cars, the crossing time was decreased for every kind of car movement required, westbound cars

showing 33.7 per cent improvement in intersection efficiency, southbound cars 26.7 per cent and eastbound to northbound cars 18.5 per cent.

At the Fifteenth Street and Grand Avenue intersection a total of 171 cars passed through the intersection between 5 and 6 p.m., occupying the intersection 2,103 seconds, or 58.5 per cent of the hour. Car movements at this point were much slower than at Eighth Street, where 240 cars were passed in 2,155 seconds, or in practically the same time. The speed of cars in the Fifteenth Street intersection is also shown compared to that at Eighth Street. The crossing time per car at Eighth Street averages 10.2 seconds, while at Fifteenth Street the average is 12.5 seconds, which is over 22 per cent more. The large number of turning movements required is the primary cause of the lower speed existing at this intersection. It is shown that 34 per cent of the 175 cars scheduled through this intersection must make either the right or left hand turn, of which 24 per cent make the slow left-hand turn. Rerouting of lines so as to reduce the number of cars turning will minimize delays at this point. Until such changes can be effected double berthing and a slight rearrangement of passenger and positive stops will afford much relief.

The average speed of southbound cars between Seventh and Fifteenth Streets on Grand Avenue was found to be but 4.18 miles per hour during the evening rush hour. From Seventh to Eighth Street the cars averaged but 3.03 m.p.h. and from Tenth to Twelfth Street 3.93 m.p.h. The northbound cars, although these are less in number and some are not loading heavily, do but little better, as the average speed from Fifteenth Street to Seventh Street is only 4.83 m.p.h., while from Thirteenth Street to Twelfth Street it drops to 3.49 m.p.h. During the fifteen-minute period from 5:30 to 5:45 the southbound cars averaged but 1.64 m.p.h. between Seventh and Eighth Streets.

### EFFECT OF VEHICLE PARKING SHOWN

Referring to the effect of vehicle parking along Grand Avenue, the report states that although the roadway has a width of 69 ft. from curb to curb vehicular parking often interferes with both vehicular and car movement. The greater width of street invites parking in double rows, and observations show that even during the heavy rush hour vehicles often stand in triple rows at the most congested point. A vehicular count taken during the morning rush hour at Twelfth Street shows that 1,251 vehicles passed through the intersection in one and one-half hours from 7:30 to 9 a.m., of which number 617 came from the north and 463 from the south. The striking feature is that at this morning rush hour jitneys constituted 59 per cent of the vehicles from the north and 27 per cent of those from the south. During the two hours from 4 to 6 p.m. 2,104 vehicles passed through the intersection at Twelfth Street. Of this number 955 entered from the north and 780 from the south. During the hour from 5 to 6 p.m., which is the maximum rush hour, jitney traffic constituted over 30 per cent of the total at this intersection. Similarly, at



the Eighth Street intersection, of 860 vehicles passing through the intersection, 32 per cent were jitneys. From the above it may be seen that a very large proportion of the congestion on Grand Avenue is due to the number of jitneys operating both north and south bound over this avenue during the morning and evening rush hours.

In order to determine the service rendered by jitneys a count of all automobiles was made at Twelfth Street and Grand Avenue. This showed that from 4 to 5 p.m. 951 vehicles transported 1,900 persons through this intersection, or at the rate of two per vehicle, including the driver. Included in the above total, 231 jitneys carried 527 passengers through this intersection, which is only 2.3 passengers per jitney. From 5 to 6 p.m., when the streets are necessarily congested, 353 jitneys crossing the intersection transported 1,501 passengers, or 4.3 passengers per jitney. During this period seventeen street cars, or 8.7 per cent, added to the existing service would have provided ample transportation facilities for all jitney patrons and the vehicular congestion would have been reduced over 30 per cent.

In general, the large number of vehicles moving north and south bound on Grand Avenue is the cause of much street car congestion and the slow movement of this service. Vehicles block the space between cars and sidewalks, especially when both cars and vehicles are standing at an intersection, so that pedestrians and street car patrons find it difficult to cross the street or board a waiting car. Intersections are congested and boarding movements are greatly delayed. Cars are slowed down and thrown off schedule. This results in poor service for street car patrons as well as congestion and slow speed for all vehicular traffic.

#### MEASURES RECOMMENDED FOR RELIEF

The measures recommended in Mr. Beeler's report to expedite traffic movement were as follows:

1. Arrange the rear door of all safety cars so that they may be opened by street collectors, enabling faster loading for this type of car.
2. Use raised platforms in the streets at seven important passenger stops in the congested districts.
3. Combine and relocate passenger stops so that boarding and alighting facilities will be improved, including double berthing arrangement at twenty-three locations.
4. Give Grand Avenue cars the right of way over less important intersection lines.

5. Reroute some of the car lines so as to reduce the number turning into and out of Grand Avenue.

As these recommendations are much the same as were made in connection with conditions treated in earlier sections of the report, and described somewhat in detail in the previous issues of the JOURNAL referred to, the details will not be taken up here.

The result of the recommendations as to stop changes in the section of Grand Avenue between Third and Twenty-seventh Streets, a distance of 2.25 miles, would be to reduce the number of passenger stops from fifty-three to thirty-eight. They would average 8.4 to the mile, as against 11.78 stops per mile under present operation. This is a reduction of 17 per cent. Positive stops on Grand Avenue would be reduced from thirty-two to eight. This would give the right of way to Grand Avenue cars over those of less important intersecting lines. Seven "slow" signs were recommended as safety measures to be observed by Grand Avenue cars.

Section V of the report deals with Walnut Street, which is a high-class retail thoroughfare. Operating on this street there are three lines which furnish service in both directions and four other lines which furnish service in one direction only. Between Tenth and Fifteenth Streets 75 per cent more cars are scheduled northbound than southbound, and from Eighth to Tenth Street there is an excess of 35 per cent in the opposite direction. This unequal distribution of northbound and southbound cars gives an unbalanced traffic movement that is a factor partly responsible for the congestion during the evening rush.

There are 944 cars scheduled through seven Walnut Street intersections during the evening rush hour. There are also a large number of right and left hand turning movements required at these principal intersections. This points to the obvious desirability of providing sufficient berth capacity and keeping the straight track open at intersections where large numbers of cars are turning. In this connection it is pointed out that the changes recommended and later installed on the Eighth Street lines brought about a decrease of over 20 per cent in the crossing time for cars making the right-hand turn at Grand Avenue and over 40 per cent for cars making the left-hand turn, while the average decrease for all cars was 17.5 per cent. This resulted in the crossing being unoccupied 3.5 per cent more of the time, despite the fact that 22 per cent more cars were passed through the intersection during the maximum hour. Recommendations similar to those for Grand Avenue were made as to the rearrangement of stops and a co-ordination of vehicular and street car movement by traffic officers for the Walnut Street intersections.

Time study made as to the running time of cars along Walnut Street between Eighth and Fifteenth Streets during the rush hour from 5 to 6 p.m. showed that southbound cars move at the rate of 4.62 m.p.h., while from Tenth to Twelfth Street they average only 3.08 m.p.h. Northbound cars in the first instance make but 3.57 m.p.h., while this is reduced to 2.41 m.p.h. between Tenth and Eighth Streets. The slowest speed observed was made by northbound cars between Tenth and Eighth Streets, where for a period of 15 minutes their speed was reduced to 1.45 m.p.h.

The location of passenger stops, their close proximity to each other, the lack of double berthing and the poor loading facilities, vehicular parking, congested street traffic and unbalanced routing of cars are factors all contributing to the slow car speed prevailing on Walnut Street.

#### PARKING OF VEHICLES

On Walnut Street any parking of automobiles compels moving traffic to run so close to the car tracks that street car movements are retarded. Occasionally double rows of parked vehicles force the moving traffic on the car tracks at loading points. This prevents street cars from pulling into the berths, keeps patrons from reaching the cars and destroys regularity of service. The consequent delay of the street cars is the cause of much overloading which otherwise would be largely eliminated.

Between the hours of 4 and 6 p.m. 1,369 vehicles passed through the intersection at Walnut and Twelfth Streets, carrying a total of 3,343 persons, including the drivers. This is at the rate of 2.4 persons per vehicle.



Deduct the jitney and truck drivers, and less than two passengers per vehicle are carried. This vehicular traffic is a major cause of congestion, slow loading and consequent slow speed. At the intersection at Eighth and Walnut Streets 1,134 vehicles pass through in the rush-hour period between 4 and 6 p.m.

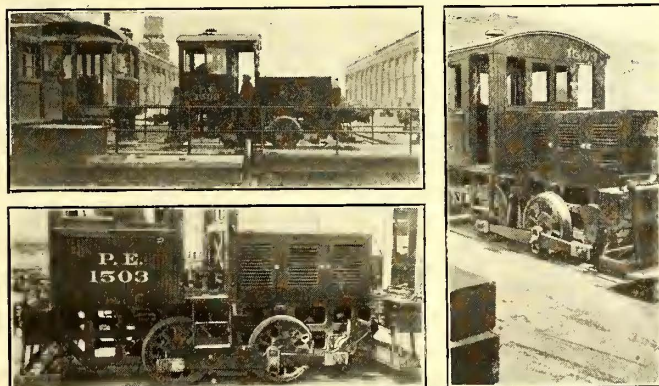
During the maximum evening hour the jitneys operating over Walnut Street through the congested district constitute over 50 per cent of the vehicular traffic in each direction. The vehicle passenger counts made show that an additional street car every five minutes would care amply for all the jitney passengers and would reduce the vehicular traffic movement 60 per cent in the heavy direction of travel. This gives some indication of the inefficiency of the jitney as a common carrier.

The recommendations made as to relocation and reduction in the number of passenger stops were shown to reduce the passenger stops from thirty-three to twenty-three, or about 30 per cent, and positive stops from twenty-seven to ten, with slow-speed signals increased from four to seven. The recommendations covered also the installation of double berth passenger stops at eighteen points on Walnut Street and three points where car lines are turning into Walnut Street.

### Novel Type of Yard Locomotive

**T**HE mechanical department of the Pacific Electric Railway has designed, built and placed in operation a new yard locomotive for use in the yards at the new Torrance shops.

The locomotive has a draw bar pull of 3,000 pounds with a weight of 22,000 pounds on the 32-in. drive wheels. The length of the locomotive is about 20 ft. A six-cylinder, 70 to 90 hp., automobile type gasoline



VIEWS OF A NOVEL TYPE OF YARD LOCOMOTIVE USING AUTOMOBILE ENGINE WITH A JACK SHAFT AS THE SOURCE OF POWER

engine is the power source for the locomotive. The engine is connected by a friction disk clutch and propeller to a jack shaft, to each end of which the side rods are attached by means of cranks and pins.

The locomotive is intended to be used solely in moving cars from one shop building to another or to and from the transfer table. It permits quick handling of disabled cars on dolly trucks.

The Ontario Safety League, Toronto, is sending to school children copies of letters from the Mayors of Canadian cities commending the work of the league and giving suggestions as to how they can assist in reducing accidents.

## Invites Charter Members

### Federated American Engineering Societies Ready for Business—First Annual Meeting of American Engineering Council in November

**T**HE joint conference committee of the four "founder" engineering societies has just issued the following invitation to all engineering and allied technical organizations in the country:

The joint conference committee of the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers and the American Institute of Electrical Engineers, acting as the ad interim committee in accordance with the authorization of the organizing conference held in Washington, D. C., June 3-4, 1920, extends to your organization a cordial invitation to become a charter member of The Federated American Engineering Societies and to appoint delegates to the first meeting of the American Engineering Council, of which due notice will be given, to be held in the fall of this year.

There has been previously sent to you an abstract of the minutes of the organizing conference, at which there were in attendance 140 delegates, representing seventy-one engineering and allied technical organizations. It was the unanimous opinion of the conference that there should be created an organization "to further the public welfare wherever technical knowledge and engineering experience are involved and to consider and act upon matters of common concern in the engineering and allied technical professions," and that this organization should consist of societies or affiliations, and not of individual members.

On the basis of these fundamentals the attached constitution and by-laws were unanimously adopted by the conference. These contain full information concerning The Federated American Engineering Societies, the American Engineering Council, its executive board, and of the various officers and committees. The basis of representation therein stated for the American Engineering Council is one representative for from 100 to 1,000 members and an additional representative for each 1,000 members or major fraction thereof.

At the gathering in Washington,\* which was the greatest event in the history of the engineering and allied technical organizations in this country, steps were taken which created "The Federated American Engineering Societies," which will have a far-reaching influence on the future of these professions. The fact that this action was taken without a dissenting vote indicates that the psychological moment had arrived and that there was a unanimous desire on the part of the representatives of these professions for the organization formed.

The joint conference committee, the ad interim committee, would ask each organization invited to take favorable action in the matter of membership in the organization at the earliest possible moment and to advise the committee promptly of the names of the delegates who will attend the first meeting of the American Engineering Council in November of this year.

The joint conference committee is confident that with the universally acknowledged need for such an organization there will be a prompt affirmative response to this invitation.

The committee has also recently issued its Bulletin No. 3, outlining in some detail the purposes of The Federated American Engineering Societies. This bulletin also outlines the various past activities of Engineering Council, at present consisting of representatives of six societies, A. S. C. E., A. I. M. & M. E., A. S. M. E., A. I. E. E., A. S. T. M. and A. R. E. A., and shows how the way has been opened for American Engineering Council, the operating organization of The Federated American Engineering Societies, to succeed Engineering Council and speak for the whole body of engineers and allied technologists on matters of general public interest and welfare.

The bulletin also answers the question as to what the federated societies intend to do and says in this respect:

\*See ELECTRIC RAILWAY JOURNAL, June 12, 1920, p. 1213.



What it intends to do is to use its power for the service of the community, state and nation in public affairs wherever engineering experience and technical knowledge are involved and to consider and act upon matters of common concern to the engineering and allied technical professions.

In the conduct of many public matters which are essentially of an engineering nature it is vital to the public welfare that engineers and allied technologists should lead.

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It is the duty of the engineer to take up public service work. It is incumbent upon him as a citizen to "do his bit," and there is the added responsibility due to his special knowledge and experience which is primarily of importance in the execution of public work.

The Federated American Engineering Societies will speak for a group of citizens who by reason of special training and knowledge represent a high order of intelligence, and who individually and collectively would be derelict in their responsibility for the talents they possess if they did not apply them unselfishly for the common weal.

In unity of action there will of necessity be strength and power.

Bulletin No. 4, just issued, gives a story of the Washington organizing conference as reflected by excerpts from the editorial and other comment in the technical press.

A comprehensive survey of the editorials, reports and comments which appeared in the technical press and society journals was published recently by the McGraw-Hill Company under the title "Engineers Unite."

The headquarters of the joint conference committee are in the Engineering Societies Building, 29-33 West Thirty-ninth Street, New York City, and various bulletins and items of information are gladly furnished upon request.

## Junior Accountants Neglecting Opportunities

**Spare Time Should Be Used for Study—Advancement Possibilities Real and Attractive  
—What Books Should Be Read**

BY I. A. MAY

Comptroller the Connecticut Company, New Haven, Conn., and president American Electric Railway Accountants' Association

**T**HOUSANDS of junior accountants in the street railway business have opportunities before them today that they little realize. It is a well known fact that the accounting done by steam railroads, electric railways and public utilities in general is more standardized, and we might say on a much more scientific basis, than the accounting in all other industries, except perhaps in some of the largest manufacturing concerns.

A junior accountant after passing through all of the accounting divisions of a fairly large electric railway little realizes that if he would use to advantage the spare time outside of the regular office hours in studying a few of the excellent accounting books now on the American market he would within a short time be in a position to pass the examination held in his state for the degree of C.P.A.

If he is successful in passing the examination positions are open which pay from three to five thousand dollars per year for junior public accountants and from five to fifteen thousand for senior accountants.

While the above figures may seem like a dream to the young accountant, yet they are facts, and I want to call your attention to other facts, namely, that in applying the spare time in studying accounting books they will find within a short time that their daily work appears to be very much easier as a result of the education and the

training that they are receiving, and they will soon begin to apply the theory obtained from the books to their daily work, improving and bettering it in that way.

This improvement and betterment is bound to be recognized by their superior officers, and the chances are they will receive an increase from their present employers and, no doubt, promotion.

One of the greatest men of the last century, Mr. Gladstone, gives us the following:

Believe me when I tell you that the thrift of time will repay you in after life with a usury of profit beyond your most sanguine dreams, and that the waste of it will make you dwindle, alike in intellectual and in moral stature, beneath your darkest reckonings.

Some one has enlarged upon the above, and I quote as follows:

Any one who used his time to its best advantage between the ages of fifteen and thirty-five will surely be in a position to do what he likes with it from thirty-five on. If young men could realize this fact, every available hour would be given to study. When you waste your time in occupations and amusements that are unnecessary to body or mind do you know what you are throwing away? Let us enumerate a few of the things:

Freedom from anxiety in middle life and old age.  
The best educational and social advantages for your children.

The treasures of art and literature which come with the leisure and cultivated taste of middle life.

Respect and influence in the community, which the best men treasure as one of their richest acquisitions.

The broadening and refining which result from travel in foreign lands.

The satisfaction of a well-developed and well-spent manhood.

What a price that is to pay for laziness or passing pleasures.

There are perhaps some who would not agree with this, but I believe every word of it and hope by calling the attention of junior accountants to this illustration that more attention will be given to study and to their work. Some readers might be interested in a list of books which I believe to be extremely helpful in the study of accountancy and a short list\* is given below:

Auditing, Theory and Practice—Montgomery.  
Corporation Organization and Management—Conyngton.  
Corporation Accounting—Bennett.  
Cost Accounting—Nicholson.  
Accounting Practice and Procedure—Dickinson.  
Principles of Depreciation—Saliers.  
Office Management—Galloway.

In addition to the above I would recommend to those particularly interested in accountancy as a future the *Journal of Accountancy*. This journal has a students' department which is given over to accounting questions, answers and discussion of accounting questions. The journal is the official organ of the Certified Public Accountants and is published monthly by the Ronald Press, 20 Vesey Street, New York City. This company also published the above mentioned books, as well as other good accounting books.

For general all-around street railway education "Electric Railway Transportation," by Blake and Jackson, and other similar books may be obtained from the McGraw-Hill Book Company.

As president of the American Electric Railway Accountants' Association I pass this information along to all junior street railway accountants and to accountants employed in the various other public utilities. My advice is to begin immediately and work hard. Do not neglect opportunities which are right at hand.

\*Mr. May's modesty apparently prevents him from mentioning his own book, "Street Railway Accounting," the Ronald Press, which is the standard in street railway accounting practice.—EDITORS.



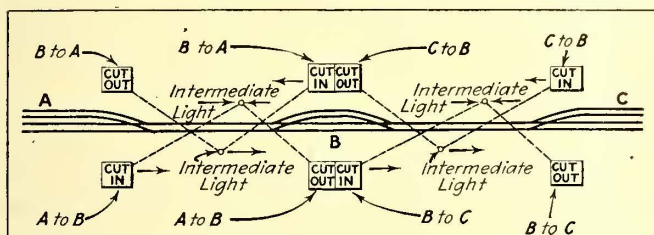
# Dual Control Signals on the Pacific Electric

Improved Type of Signal Light Circuit Adopted for Single-Track Line to Minimize Hazardous Operating Conditions

By CLIFFORD A. ELLIOTT

Cost Engineer Pacific Electric Railway, Los Angeles

SOME of the single-track lines of the Pacific Electric Railway serve territory that does not demand frequent service. In some cases this territory is thickly settled and has a dense growth of orange trees through which the lines wind and which affords very little straight-away view for the trainmen. Due to the limited traffic on these lines a heavy investment for block-signal protection is not always advisable, in spite of the fact that the company takes a hearty interest in safeguarding the traveling public. The past practice



SINGLE TRACK LINE THROUGH ORANGE GROVES PROTECTED WITH NEW DUAL CONTROL SIGNALS

has been to protect certain highly traveled single-track lines with either all-electric automatic block signals or with a staff signal system. The less important single-track lines with limited travel and infrequent service have been protected with a single type of signal-light circuit controlled by a switch-light box at each end of the circuit. Recently this type of signal protection has been improved to what is known as dual control and has been developed in our engineering department.

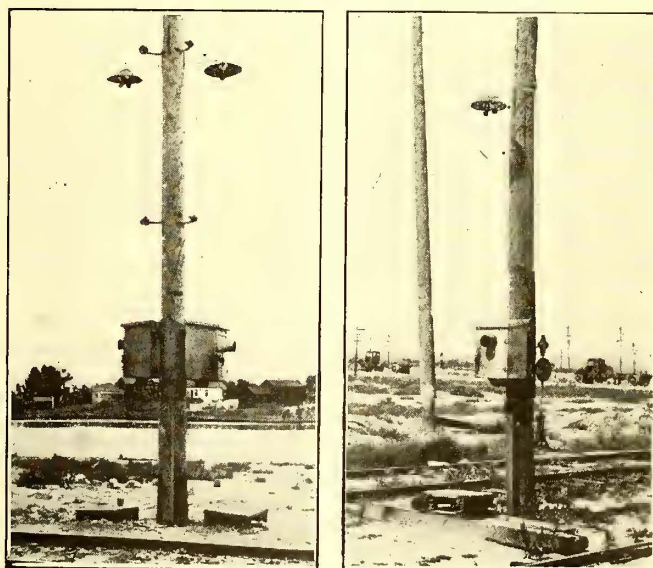
An accompanying illustration shows a single-track line, with sidings, recently protected with this improved type of light circuit. The length of the protected line is approximately 10,000 ft. The illustration shows a tangent line, but in fact the line traverses territory densely covered with orange groves, a large portion of the line curving in and out among the groves. The double signal-light circuit with its intermediate signals was installed and placed in operation in accordance with the details shown in the drawing. The further details of its operation are explained as follows:

When a train inbound arrives at Station A and desires to proceed to the siding at B the conductor throws the signal-light circuit at the switch box marked "A to B cut in," thus setting the circuit against opposing trains at Station B, at switch box marked "A to B cut out." Upon arrival at Station B and wishing to proceed to Station C the conductor clears the line from A to B by throwing the circuit at box marked "A to B cut out" and throws the switch at box marked "B to C cut in." Upon reaching C the conductor clears the circuit at box marked "B to C cut out." In reverse operation when a train at C desires to proceed to B the conductor operates the switch in the box marked "C to B cut in." Upon reaching B the conductor clears the circuit at the box marked "C to B cut out" and operates the switch in the box marked "B to A cut in." He will cut out the

circuit box marked "B to A cut out" upon reaching Station A. In accordance with the arrangement of the signal switch boxes, train crews will always use switch boxes on their right-hand side only.

The intermediate signals are located at the beginning and end of curves. When the train crew operates the switch to enter the circuit, this operation causes a green light to appear in the switch box, while a green light also shows up on the pole for the motorman's observation. This operation also causes a red light to appear in the opposing intermediate signal, as well as in the switch box at the other end of the light circuit, thus preventing two trains from entering the circuit at the same time. In case two trains should chance to throw the switch at exactly the same time red lights would show up in each box as well as on the poles at both intermediate signals.

An improved type of switch for controlling the new type of circuits was perfected. A walking-beam relay switch without its coils was placed in each switch box and a three-point double-pole, double-throw switch was connected at the top of the relay for operation either to the right or left as shown in switch-box cut. The installation of the switch on the relay was so devised and installed as to insure the safety of trainmen against



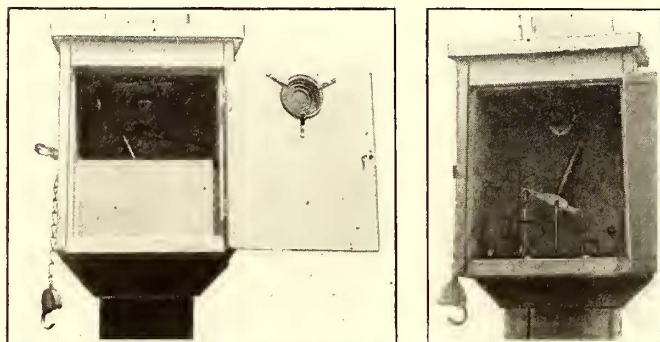
AT LEFT, SWITCH BOXES AND LIGHTS ON POLE IN MIDDLE OF CIRCUIT. AT RIGHT, SWITCH BOX AND LIGHTS ON POLE AT END OF CIRCUIT

shocks from excessive current entering the relay from the circuit. This was accomplished by inserting two removable redwood strips in front of the switch. These are easily removed for maintenance work. This safety precaution is also illustrated in the switch box. The cuts of two switch boxes and banks of lights on a pole in the middle of a circuit at which point another line branches off and a switch-light box and bank of lights on



a pole at the end of a circuit show method of installation. It will be noticed that the slatted platforms are anchored to the pole to prevent removal.

The improvement of the dual control type of light circuit over the single type is the elimination of confusion and misunderstanding of trainmen as to who has the right-of-way when two trainmen, one at each end of the circuit, simultaneously throw the switch-light circuit. This improvement reduces the hazard of accidents, should a trainman under such circumstances enter the old type of light circuit in the face of a pos-



AT LEFT, SWITCH BOX WITH SAFETY PRECAUTION FOR TRAINMEN. AT RIGHT, ARRANGEMENT OF SWITCH PARTS INSIDE BOX

sible approaching train, the crew of which has taken a similar action and proceeded through the circuit. The improved type of light circuit also eliminates frequent delays to the train schedules, due to the more positive method of assurance to the trainmen that the single-track line is clear. This type of circuit has also been successfully used by the company for operating exclusive single-track freight branch lines jointly operated with steam roads where the steam road line has been electrified for such joint operation.

## Training Platform Men

New Plan at Los Angeles Involves Practical Instruction on Several Lines of a Division in Turn

BY J. G. JEFFERY

President East St. Louis & Suburban Railway  
Director of Public Relations Los Angeles (Cal.) Railway

**T**HE training of new motormen and conductors so that they will enter service thoroughly familiar with one line of a division and capable of handling it efficiently rather than begin with a general but hazy knowledge of all lines is the feature of an instruction system recently established by the Los Angeles Railway. The territory served covers 365 square miles, including annexed districts, so that car lines of considerable length are necessary for adequate service. Runs of from 14 to 21 miles are the rule, rather than the exception, so that the task of familiarizing new men with stops and transfer points assumes extensive proportions.

Formerly a new trainman was given three days' instruction in the general principles of car operation on one line. Then he would spend a day each on perhaps ten long lines and under as many different instructors. If he was assigned, after his "breaking-in" period, to the first line his knowledge with regard to it was apt to have become hazy, with resultant decrease in his efficiency. Further, while riding with ten different motor-

men or conductors in ten days, the new man might encounter a careless instructor who would trust to the next man to straighten out the learner on details he did not feel disposed to explain adequately.

Under the new system a new man spends from six to ten days on one line, under the same instructor. If he shows ignorance in punching transfers or any of the other details of operation the one man who gave the instruction is held responsible. Recruits receive one general instruction lecture before going on a car, covering the fundamental principles of good car operation.

Motormen are given instruction on a specially built car which shows the entire electrical equipment. After his training experience on a car the man is given other lectures on such matters as preparation of trip reports, accident data the company needs, method of procuring the names of witnesses and numerous other details.

The instruction department then turns the new man over to a division superintendent as qualified to man a car on the line on which he has received instruction. He is placed on that line and works a full shift for ten or fifteen days.

To apply the principle that the best training for a man is in handling a car and dealing with the public, the Los Angeles Railway executives arrange to have the new man take a morning rush-hour car on the run that he has studied, and then to spend the remainder or part of his time in learning the details of another run of the same division.

The length of time needed by a man to learn the new run naturally depends on himself, but in the end he is so trained that he can take it on regular duty. He can shift between the first and second lines to meet the service requirements and can then gradually learn other lines until he is capable of handling any one of them efficiently.

The new plan contemplates written examinations for new men instead of the present oral examination which is given in connection with the advanced instruction lectures.

A new trainman is paid \$1.50 a day while learning to take a regular job providing he stays at least until the first pay day after he qualifies. After he has qualified to take a car on regular service he begins earning pay on the usual scale. When he begins training on a second or third run his pay is altered. He is paid for his morning rush-hour work on the regular scale, then while he is learning another line he receives 25 cents per hour. This is the scale for waiting time. It is higher than the rate paid during the initial training period, thus recognizing that the man is not entirely "green."

The average new man can become fully efficient on a half dozen lines of a division in fifteen days under the new system. The men take to it well and, on the whole, receive thicker pay envelopes than under the former plan. The "one-line instruction" has found favor with the officials of the Los Angeles Railway and has come to stay.

An appropriation of \$85,000 has been authorized to the Bureau of Standards for the investigation of standards of practice and methods of measurements of public utilities, such as gas, electric light, electric power, water, telephone, central station heating and electric railway service and the solution of the problem arising in connection with standards in such service.



## Bridgeport Traffic Analysis

**Recent Report Shows Buses Alone Are Uneconomical—More One-Man Cars Recommended, with Bus as Auxiliary and Operated by Railway**

THE Bridgeport (Conn.) Chamber of Commerce has just made public the "Report on the Most Satisfactory and Economical Method of Mass Transportation for Bridgeport," submitted to it about March 1, 1920<sup>1</sup>, by Walter Jackson, consulting engineer. The report as printed is really an abstract by its author and occupies more than six pages in the Aug. 1 issue of the chamber's semi-monthly publication, the *Bridgeport Progress*. A copy of this issue is being sent to every important Chamber of Commerce in the United States.

The problem has been to study the Bridgeport transportation requirements of carrying about 150,000 people per day in a city whose population is 200,000 and to see whether either the bus or modern electric car alone or whether a combination of trackless and track vehicles should be used to meet these requirements.

Taking the bus operation alone, first, the report says:

In view of the wonderful development of the motor bus, it will naturally be asked whether this more flexible means of mass transportation could completely take the place of the existing railway system, first, from a physical standpoint; second, from a financial standpoint. The answer must be that even the smaller buses are *physically* practicable. L. S. Storrs, like many other electric railway operators, holds that this cannot be done. However, this opinion is based upon the assumption that the bus must necessarily use the same thoroughfares as the street car. It is perfectly true that the existing bus services of Bridgeport do, with few exceptions, follow the same routes as the electric cars; but that policy of confinement to a few streets would not have to be followed by an organized bus monopoly.

The report then quotes London figures and traffic conditions<sup>2</sup> to show that narrow streets are not a bar to a large bus traffic, and then says:

As a matter of cold-blooded fact, the buses of Bridgeport actually have been carrying 50 to 60 per cent of all the traffic at a higher schedule speed than the cars in spite of the rule that prohibits any vehicle from passing a standing car while interchanging passengers. If there were no cars at all, and effective regulations against parking machines along the curbs of Fairfield Avenue and of Main Street were maintained, it is obvious that there could be two lines of traffic in each direction instead of one. However, this advantage would not obtain with larger buses approaching street car width.

But turning to the question of financial practicability, the author says in the report that he has analyzed every possible kind of bus operation, including data obtained first hand from the Bridgeport bus operators themselves, and then adds:

Before quoting any costs and deductions, it may be well to put the cart before the horse for once by stating that the leading busmen and dealers themselves realize that a city like Bridgeport could not possibly depend upon the present haphazard individual ownership scheme for reliable and economical bus transportation. If they had the job of laying out an all-bus system, they would form a co-operative company (as proposed by Schwartz) or a railway type of organization with uniformed men (as proposed by Mills)<sup>3</sup>. None of the bus advocates interviewed had, however, a true conception of the size of the problem and of the true costs. It is now in order to see what each kind of automotive equipment would accomplish.

Following this are statements of operating and revenue figures, as well as some traffic and operating details, for several bus lines in other cities, such as for the Fifth Avenue Coach Company of New York, the proposed Detroit 10-cent fare bus, the Chicago Motor Bus Company, the Baltimore Transit Company and the Rhode Island Omnibus Company. As most of the data and facts with reference to these companies have been given in these columns they are omitted here<sup>4</sup>. It is worth while, however, to quote one remark pertinent to applying these data to Bridgeport. In discussing the Fifth Avenue bus, the report says:

As a matter of fact, two sixteen-seat Bridgeport buses at a 5-cent fare easily earn more than one forty-four-seat New York bus at a 10-cent fare. The 10-cent fare of this company is, of course, largely possible because of a visitors', shoppers' and healthseekers' clientele unparalleled in scope; it would not have a chance in Bridgeport. To get anything like the same revenue, it would be necessary to carry twice as many passengers, assuming that the average ride in Bridgeport was the same as in this largely short-ride traffic. Double the riding would be possible only if the top deck were enclosed, as American winters are not conducive to open-air riding. Another factor that militates against the use of a large double-deck bus is its slowness.

The report then discusses actual earnings and costs in Bridgeport. These have already been given in the columns of the JOURNAL more extensively and based on more complete and later information than those in the report<sup>5</sup>. As a result of the study, however, the following conclusion is reached:

From all the data gathered in the field from bus operators and elsewhere from bus manufacturers, one must come to the conclusion that thirteen to sixteen-seat buses could hardly be run in Bridgeport for less than 20 cents to 25 cents a mile without allowing for the real taxes that an organized company would have to pay, also bearing in mind that everything would have to be kept to a higher standard and that many bus-miles would have to be run whether there was any traffic for them or not. It has been indicated that by taking advantage of additional streets, it would be physically possible to handle all present bus and car traffic. It cannot be gainsaid, however, that the resulting street conditions would not be improved for the pedestrians. In any event, the matter of physical limitations becomes purely academic in the light of the foregoing proof that if individually owned buses of this size cannot earn more than 20 cents to 25 cents a mile, they can hardly prove profitable if the overhead and running expenses are on the same order.

Subsequent to his conclusion that the buses could not give satisfactory service on a 5-cent fare within all or the greater part of the area of Bridgeport, the report examines the possibilities of what he terms "modernized electric car operation" and makes suggestions for the application of light-weight one-man cars to the Bridgeport traffic problem.

The question emphasized is not the increase in cost of electric railway operation, but rather whether "any resources of the art have been developed to offset this increase in cost, and, if so, to what extent the Connecticut Company has availed itself of these resources."

The report suggests that the Connecticut Company has done all that it can in saving power through the education of motormen and by means of power saving recorders, but that a far greater saving of power could have been possible through the earlier adoption of light-weight automatic one-man cars. The author infers that the Connecticut Company has been slow in the installation of equipment of this sort and states the belief that if the one-man car had been installed to a sufficient

<sup>1</sup>Since this report was made two fare changes have taken place (see issues of April 10, page 777; July 24, page 193; July 31, page 244, and Aug. 7, page 294) and electric car service has been discontinued (July 26) (see issues of July 10, page 101; July 24, page 93; July 31, page 245, and Aug. 7, page 292.)—EDITORS.

<sup>2</sup>See ELECTRIC RAILWAY JOURNAL, Oct. 11, 1919, page 708; Feb. 28, 1920, page 425.

<sup>3</sup>See page 330 this issue.

<sup>4</sup>See ELECTRIC RAILWAY JOURNAL, May 29, page 1088; July 3, page 11; July 31, pages 209-218—"Fifth Avenue Bus," Tables XV-XVII; "Chicago Motor Bus," Tables XVIII-XX; "Baltimore Transit," Table VII; "Rhode Island," Table VI.

<sup>5</sup>See ELECTRIC RAILWAY JOURNAL, July 31, page 211, Table V.



degree and the 5-cent fare retained the jitney bus would have been automatically eliminated.

The report then includes an analysis of one-man car costs compared with two-man car costs and an estimate is given of what the effect would be in Bridgeport. The report then goes on to say:

Although the jitney bus has struck deeper root at Bridgeport than anywhere else except Newark, N. J., it is doomed to disappear against faster and more frequent electric car service as in other communities. The margin of profit in running a jitney bus is wiped out whenever the electric railway finds it possible to add 50 to 100 per cent more car-miles. Against a ten-minute car interval a bus driver may pick up twenty passengers on a half-trip; against a five-minute car service, he will be lucky to pick up fifteen, and fifteen will not be enough to make the business attractive. Although the Main Street safeties have been running only since Dec. 12, any one can see that they are hurting the buses. In the residential section, particularly, people now deliberately let a bus go by because they see one of the new cars right behind. If they will do this in the face of the convenient nickel fares of the bus, what chance will the latter have with a 5-cent fare on the car? Indeed, Leader Schwartz, who sees the handwriting on the wall, says the busmen will sell six tickets for 25 cents in that event. That element of the population which is supposed to be permanently against corporations is too small to keep the bus business going on a large scale, and many of these people will soon forget their grievances with the coming of better service and lower fares.

But the solution even with one-man cars could not eliminate the two-man cars entirely, as two-man car train operation would then be desirable or even necessary in order to handle rush-hour peaks.

And even with electric railway service "modernized," there is still room for the bus, the report says; even need for it, not as a competitor, not even necessarily as a direct money maker in itself. This means that buses are not adapted to exploitation by private operators. But they are often "economically justifiable if handled in co-ordination with the existing electric railway service." An example of a useful service is quoted, in that Warner Brothers, a corset manufacturing concern, had encouraged a direct "factory-to-home" bus service, by which some 500 out of 3,000 employees were routed by bus and saved about one-half the time ordinarily taken by electric cars and busy corners avoided. About twenty-three buses were in this service, now discontinued. Mr. Jackson then argues that if similar service were introduced to such an extent that 20 to 25 per cent of the rush-hour travel could be kept away from the Bridgeport busy center crossing, Main and Fairfield Streets, the traffic relief would tend to speed up the railway service.

There are then suggested five typical routes for buses, to fit certain detailed local conditions. The characteristics of these routes are of interest, as indicative of the field of the bus in such a community in co-ordination with the electric railway. In general, they fit the definition of serving districts in which no service by rail could be justified, or of providing crosstown service from certain residence districts to factories in which many persons from the particular districts are employed. One interesting route would be to a factory employing 2,200 people, and here a service of two or four times per day, except for an occasional bus, is suggested.

Mr. Jackson would make the bus routes flexible, having them run from certain districts to factories at time of travel to and from work and shift to shopping or business downtown districts for the other parts of the day.

But the interesting economical point of fares and transfers then comes up, and on this the report says:

If the various bus services outlined are given in co-ordination with the electric railway service it will be natural for the public to expect transfer privileges and the same scale of fares. As regards transfer privileges these ought to be kept down to the limit and used primarily only where the bus is an extension of the car route. Where the same section can be reached either by car or bus, the bus fare should be higher as part compensation for the superior speed offered. The special factory-home services should be handled at special rates of fare in accordance with the distance traveled.

It is not to be expected that even these special rates of fare will make the bus services self-sustaining, but if employees have voluntarily paid busmen 7½ cents a trip for better service they may be expected to do so where such service will be more reliable.

Anywhere from 50 to 100 buses could be used at the beginning. It might prove good policy to purchase these from the better class of bus owners and give them the opportunity to continue at this work if they saw fit to do so. The experience of some of these men would also be invaluable for the development of these services and for the working up of opportunity to use buses for mid-day shopping travel, for handling pleasure parties, groups of school children, etc.

While a 5-cent fare is theoretically possible for the entire city, the day of the blanket unit fare has gone. It is believed that the greater part of the public would be satisfied if the 5-cent (or other lowered) fare were granted for distances of 2½ to 3 miles, so that an increment of 2 cents per mile would be paid only by those taking the longest possible ride east-west or going beyond the city limits. There is no sound reason why Bridgeport should have to subsidize the back-country through lower fares when it has so much short-haul territory still to develop.

With reference to zone boundaries, it is suggested that equal length zones are not necessary, even though the public complains of discrimination.

The answer to this is that a zone system is only a zone system if the lengths of the zone vary in accordance with traffic conditions, density of traffic, rate of return and the like. Equal-length zones are practically unknown on the hundreds of foreign electric railways, whose experience with zone fares is as old as the electric and street railway business.

The suggestions are summarized as follows:

1. Operate all off-peak mileage with one-man cars.
2. Use two-car trains to help handle the peak traffic.
3. Use direct-routed buses at special fares to give faster rush-hour service while avoiding congested area.
4. Install bus lines for isolated parts in or near the city.
5. Restore the 5-cent fare to the greater part of the city car service, retaining a more elastic zone system for extra long rides.

## Double-Deck Cars for Cape Town

THE J. G. Brill Company has recently delivered twelve new double-deck cars to the Cape Electric Tramways, Ltd., for use in Cape Town. The new cars are interesting chiefly because of the window sash arrangements. The windows are in pairs, separated by posts with an overhead hinged transom above. One window of each pair slides across the face of the other, which is stationary. The sliding sash is hung on a metal runway at the top and is easily manipulated. The window arrangement is identical on both upper and lower decks. The car seats thirty-two on the lower deck and forty-eight on the upper and has a total passenger capacity of 120. The car weighs about 24,600 lb. and has an overall height of 16 ft. 8 in. and a length of 34 ft. 9 in. It is equipped with maximum traction trucks with 4-ft. wheelbase with 33-in. driving wheels and 20-in. pony wheels.



## New Sizes of Small Pneumatic Tools

### Light-Weight, High-Speed Machines Can Be Used to Advantage in Cramped Places Where Heavy Machines Cannot Be Operated

SEVERAL new sizes of small portable pneumatic tools have recently been added to the line of "Little David" pneumatic tools, manufactured by the Ingersoll-Rand Company, New York. The new tools include a small size of close quarter drill, to be known as No. 8; a small high-speed pneumatic grinder in two types, No. 601 and No. 602, and a light-weight drill furnished in two styles, No. 6 and No. 600.

These new tools have been developed to satisfy the demands for a light-weight, high-speed machine for certain classes of work, for which the heavier tools were not entirely adapted.

The No. 8 close quarter drill is a machine for use in certain classes of work where the ordinary machine is not suitable, as close to a wall or corner. This new machine has a fairly high speed, running at 250 r.p.m. without load, but will handle drilling, reaming or tapping up to  $1\frac{1}{4}$  in. in diameter. The spindle which turns the drill, reamer or tap is operated by three rocking levers, connected directly to the pistons through connecting rods. The motor is of the three-cylinder type, with pistons acting at right angles to the levers. A very steady continuous movement of the spindle is obtained as one ratchet pawl is always in contact with a tooth of the spindle. The construction is very simple and sturdy, with least number of parts.

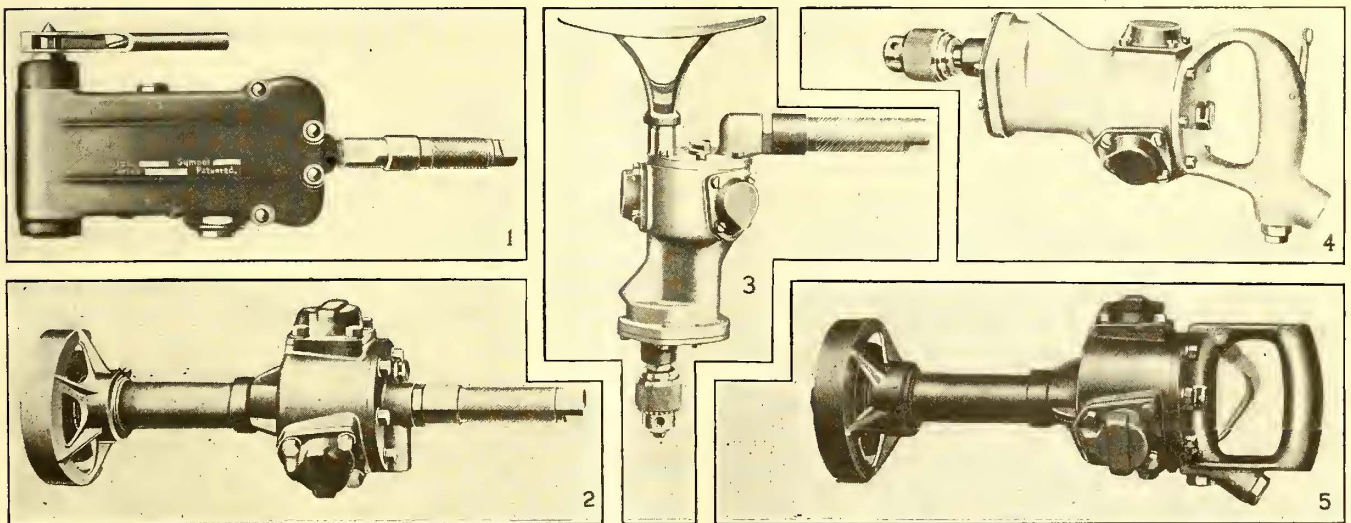
The No. 601 and No. 602 grinders are light-weight, high-speed tools running with a free speed of 4,200 r.p.m. and suitable for grinding, buffing or polishing

from the smallest size up to  $\frac{3}{8}$  in. in diameter. The free speed at 90 lb. air pressure is about 2,000 r.p.m. The two machines differ essentially in the handle construction, the motors being the same. The No. 6 has the pistol grip type of handle, while the No. 600 is furnished with breastplate and rolling throttle handle. Aluminum, reinforced with steel bushings, is used wherever possible and results in a very light-weight machine, the No. 6 weighing only 9 lb. The motor is a three-cylinder type somewhat similar to that used in grinders above. The cylinders are separate iron castings, easily accessible, renewable and are interchangeable. A very sensitive throttle control has been obtained, which, with freedom from vibration, makes the tool ideal for drilling with small drills. The bearings are all either ball or roller type.

### What Shall We Do with the Other Fellow's Tokens?

THE problem of interchange of tokens of foreign lines, taken in fare boxes, is rising and must in the future become more of a problem than it is now, in all probability. The answer may be that the expense of interchange is greater than the loss; that, in the long run, the losses will equalize.

The Connecticut Company, for example, has something like 617,000 tokens out at its various sub-agencies and therefore largely in the hands of its patrons. The mere task of keeping track of all these and of checking the agencies is no small job. And, in the checking up of various returns to these agencies, tokens of other lines are appearing rather frequently. Tokens of this company, which, as is usual, soon become almost



1—NO. 8 CLOSE OPERATION DRILL. 2—NO. 602 GRINDER. 3—NO. 600 DRILL. 4—NO. 6 DRILL. 5—NO. 601 GRINDER

work of a varied nature. Both machines have the same motor, but are equipped with different throttle and handle, the No. 601 having the closed type of inside trigger handle, while the No. 602 is fitted with the rolling type of throttle handle. A special feature of these tools is the three-cylinder motor, very different from that of the No. 8 drill, described above, which runs constantly in a bath of oil, insuring lubrication of all the parts. The valve is made integral with the crankshaft, and ball and roller bearings are used.

The No. 6 and No. 600 drills will handle twist drills

the same as legal tender in the immediate community, are doubtless carried away to other parts of the country and are used, unnoticed by the conductors, in the rush hours on other lines. Many of the tokens are so similar that they look alike in the fare box.

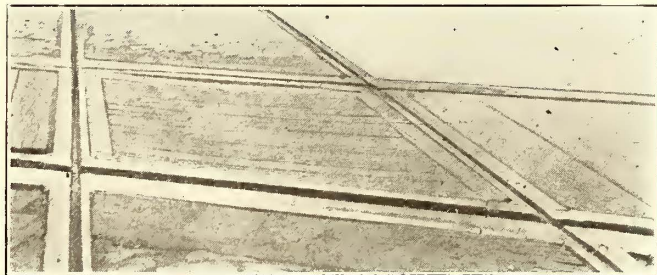
Shall the association establish a clearing house for tokens? They are worth all the way from 5 to 10 cents, and perhaps it would pay to clear them up annually, or even more frequently. It would be interesting to learn how important the question is; how many companies collect a noticeable number of foreign tokens.



## Convenient Surface for Crossings

**The Wilkes-Barre Railway Has Satisfactory Construction, Which Provides Accessibility for Tightening of Joint Plates**

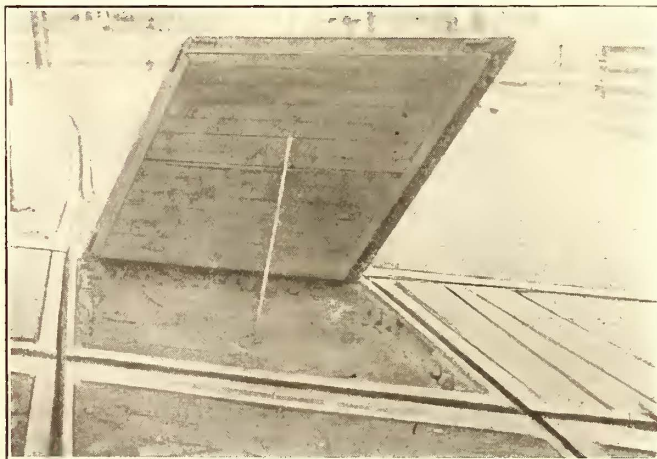
MANY different types of paving surface for railway crossings have been tried out. Those which provide the best surface for vehicular traffic are of such construction that occasional access to the crossing itself for tightening bolts is impossible without the breaking up and relaying of the pavement. The ordinary plank crossing is unsatisfactory in many respects. It has a very short life, does not wear evenly, and, if placed



UNIT CROSSING FLOORING IN POSITION AFTER SERVICE UNDER HEAVY TRAFFIC FOR FIVE YEARS

loosely, individual planks may fly out of position following the passage of trucks or other vehicles. Finally, although such a cover provides a certain degree of accessibility, the ends of the planks are frequently broken in the process of removing, so that it is necessary to replace them with new planks.

A type of construction which seems to have given excellent account of itself under service is that which has been in use for five years by the Wilkes-Barre Railway at an electric railway and steam railroad intersection and in a street which has exceptionally heavy vehicular traffic, especially heavy automobile trucks. This crossing construction is shown in two accompanying illustrations. The framework of the crossing is made of Z-bars, cut to the proper dimensions to fit the cross-



CROSSING FLOORING RAISED TO SHOW Z-BAR AND PLANK CONSTRUCTION AND METHOD OF SUPPORT ON KNEE BRACES

This crossing has, however, been in service for five years under very heavy service, and had Z-bars been used during this period it would in all probability be in first-class condition.

The bars are  $\frac{3}{4}$  in. thick and of a depth sufficient to accommodate 3-in. planks sawed into strips 3 in. wide. When these strips are cut it is made certain that the wearing surface will come on the end of the grain. The 3-in. planks are nailed together and then a wedge is placed in the center. The swelling of the wood under service makes the crossing tight. The top surface of the Z-bar has been roughened by the use of an acetylene welder in order to prevent slipping of horses.

As shown in one of the illustrations, lugs have been welded to the under side of the Z-bars, and when the crossing surface is in position these lugs rest on the knee braces of the crossing. The corner joints of the Z-bars are welded together. The plank surface is brush treated with carbolineum. In this crossing 5-in. 85-lb. rail-bolted construction is used.

Such a crossing as this is handled in exactly the same manner as an ordinary manhole cover. Two men with picks remove the flooring as a unit, tighten up the bolts beneath and replace the flooring in a few minutes. There are no spikes to pull, and there is no necessity of breaking the end of the planking, which in the ordinary plank construction is gouged out to provide a bearing on the track joint knee braces.

## I. C. C. Needs Rate Experts

IN A statement issued by the United States Civil Service Commission it is said that the recently authorized general increase in freight and passenger rates, following the wage increase of railway employees, requires the Interstate Commerce Commission to add scores of expert freight and passenger rate clerks to its present force.

The Civil Service Commission states that to fill these positions examinations will be held throughout the country on Sept. 22 and Oct. 20 for tariff examiners under the Interstate Commerce Commission. The usual entrance salary is \$1,620 a year, besides which appointees whose services are satisfactory will be allowed the increase of \$20 a month granted by Congress. The higher administrative positions in connection with tariffs will be filled through promotion.

Full information and application blanks may be obtained from the Civil Service Commission at Washington or from the secretary of the United States Civil Service Board at the post office or custom house in any city.

## Surface Contact System Abandoned

THE tramway system in Wolverhampton, England, which has been operated by the Lorain surface contact system for eighteen years, will be changed to the overhead wire system. Wolverhampton has long been noted as having the most extended surface contact system in existence. The reports from England state that the reasons for the change are not due to mechanical or electrical failures. It is brought about by the desire of the Wolverhampton corporation to operate through cars onto or from adjacent tramways, all of which use the overhead system. The cost of conversion, including construction of new track (20 miles), is estimated at £375,000.

ing after the measurements of the angle have been taken. In the particular case illustrated, angle irons were substituted for Z-bars on two sides of the crossing. It will be noted that a slight depression has resulted at the sides where the angle irons were used.



## Association News

ATLANTIC CITY CONVENTION, OCT. 11 TO 15

### Fuel Service Order Extended

THE Interstate Commerce Commission has extended for thirty days Service Order No. 9, under which the electric railways, with other public utilities, can secure priority in the transportation of coal. This extends the period of the service order to ninety days from June 21. Further details of this order will be found on page 344 of this issue. A request for this extension was made by the American Electric Railway Association.

### Executive Committee on T. & T. Meets

A MEETING of the executive committee of the Traffic & Transportation Association, the last to be held before the annual meeting except one just prior to the convention, was held in New York on Aug. 12. Those in attendance were W. H. Collins, president; R. P. Stevens, L. H. Palmer and T. C. Cherry. W. J. Harvie, representing the committee on collection and registration of fares, and Edward Dana, representing the committee on schedules, were also in attendance.

The purpose of the meeting was to consider the reports of the committees to be presented at the annual meeting. Drafts of the reports on schedules and on code of traffic principles were read, and Mr. Harvie outlined the report of the committee on collection and registration of fares, which is a joint committee with the Accountants' Association, and said that the report would be completed shortly. The secretary then gave information about the status of the other reports to be presented at Atlantic City.

It was decided to follow the same plan as last year of appointing a committee on subjects before the convention. This committee will canvass the live topics of interest to transportation men prior to and during the convention, so as to be prepared to submit a report for next year's work to the executive committee immediately after the convention. In this way association committees can be appointed promptly to take up the subjects selected, and more time will be allowed for a study of the various topics.

### Attendance at Traffic Officers' Convention

MENTION has already been made that W. H. Maltbie of the United Railways & Electric Company of Baltimore is to present an address at the convention of the National Traffic Officers' Association in San Francisco on Aug. 23-27. This organization is an association of the traffic officers of the police departments in the different cities and one of the principal objects of the convention is to frame a model motor vehicle act to be placed before the various state legislatures and the provinces of Canada. It is understood that Mr. Maltbie, in his address, will argue in favor of the following:

Establishment of delivery (i.e., congested) districts and one-way streets.

Licensing of all motor vehicle drivers.

Lights on all vehicles; horns or bells on all motor vehicles; compulsory signals before turns or stops.

Right of way as follows:

Emergency service, including public utility repair wagons.

Street cars.

Main thoroughfare traffic.

Except as above, right of way belongs to vehicles on the right.

Exclusion of pedestrians from streets except at crossings and safety zones.

Parking forbidden to block alleys, street intersections, fire plugs, entrances to private property, and street car loading berths. In delivery district parking limited to designated times and areas.

Parades limited to non-peak hours and excluded at all hours from delivery districts except by permit.

Blocking of car tracks by vehicles delivering or loading forbidden. End delivery forbidden in delivery districts. All delivery forbidden in delivery district during peak hours.

Slow-moving vehicles excluded from delivery districts during peak hours.

Left-hand turns forbidden, in delivery district during peak hours.

Electric railway companies, which are especially interested in reducing street congestion and believe that the adoption of some such plans as those outlined would assist in relieving the traffic situations in their cities, might very well take these matters up with the police departments, chambers of commerce or other bodies in their cities which will be represented at San Francisco and acquaint them with these principles.

### Standards Committee Holds Two-Day Meeting

THE Engineering Association committee on standards met in New York City on Aug. 5 and 6 to consider the reports of committees in so far as they contained recommendations relating to association standards. The members of the committee present were: H. H. Adams, Chicago, Ill., chairman; H. L. Andrews, Schenectady, N. Y.; C. H. Clark, Cleveland, Ohio; C. G. Keen, Philadelphia, Pa.; John Lindall, Boston, Mass.; H. H. Norris, *ELECTRIC RAILWAY JOURNAL*; Martin Schreiber, Newark, N. J.; W. C. Starkey, Mansfield, Ohio; N. B. Trist, Pittsburgh, Pa., and F. E. Wynne (representing N. W. Storer), Pittsburgh, Pa. During all or part of the meeting E. R. Hill, president of the association; J. W. Welsh, special engineer of the association; R. C. Cram, chairman committee on way matters; Daniel Durie, chairman committee on equipment; Charles R. Harte, chairman committee on power distribution; A. B. Stitzer, chairman committee on power generation, and F. W. Sargent, member committee on equipment, were in attendance. A summary of the actions on the recommendations of the several committees follows:

*Committee on Way Matters*—Report presented by Mr. Cram. On the adoption of a recommended uniform system of track spirals as presented, approved; on substitution of submitted designs of 7-in. and 9-in. girder grooved rails with curved heads for the corresponding present standards, approved; on revision of recommended specifications for plain bolted special trackwork, approved; on slight revision in wording in several sections of the Engineering Manual relating to way matters suggested to increase clarity, approved; on substitution of certain A. S. C. E. and A. R. A. rail sections for present standard sections, approved.

*Committee on Buildings and Structures*—On adoption as a "recommended practice" a set of suggestions regarding inspection and maintenance of buildings, approved. Mr. Schreiber explained the relation of these suggestions to the rules of the American Railway Engineering Association.



**Committee on Power Generation**—Report presented by Mr. Stitzer. On adoption as a "recommended practice" of a form of contract for the purchase or sale of power, referred to the convention for discussion before action by the committee.

**Committee on Equipment**—Report presented by Mr. Durie. On adoption as standards of submitted dimensions for steel wheels and wheel treads and flange contours, of submitted designs for limit-of-wear gages for flanges of  $\frac{1}{8}$ -in. thickness and for several journal bearing and wedge gages, approved; on revision of standard specifications for solid wrought carbon-steel wheels for electric railway service, action postponed and matter referred back to committee pending receipt of information as to action on the same general subject by a joint committee of the A. R. A., mechanical section, and the A. S. T. M.; on adoption as standard of submitted gaging points and terms for wheels and tracks, approved; on revision of standards for brake-shoe heads and brake-shoe keys as submitted, approved.

**Committee on Power Distribution**—Report presented by Mr. Harte. On publication in the *Engineering Manual* under "Miscellaneous Methods and Practices" of a submitted revised specification and form of contract for electric conduit construction, approved.

In conclusion, the standards committee decided to include in this year's report the actions taken at the February, 1920, meeting, although these related to reports of standing committees which appeared in the 1919 proceedings.

### Connecticut Company Section No. 7 Holds Annual Outing

THE annual summer outing of the Connecticut Company Section No. 7 was held at Momauguin on Aug. 5. Owing to the new fare rate effective Aug. 8 on the Connecticut Company's properties, many members were prevented from being present, therefore the attendance was not as great as in former years, there being ninety-nine dinner tickets sold.

The morning was given up to athletic events, consisting of a tug-of-war, the married men against the single men, same being won by the married men; 75-yard dash, sack race, fat man's race, relay race and baseball game, this last event being the principal feature of the day. The result of the score was Resolutes, 3; Shamrocks, 2. Special mention should be made of the home run by Henry Downs, superintendent of Westport, who came over the plate at a pace that would make "Maud S" blush.

Dinner was served at Theodore P. Swift's, Momauguin, at 1:30 p.m.

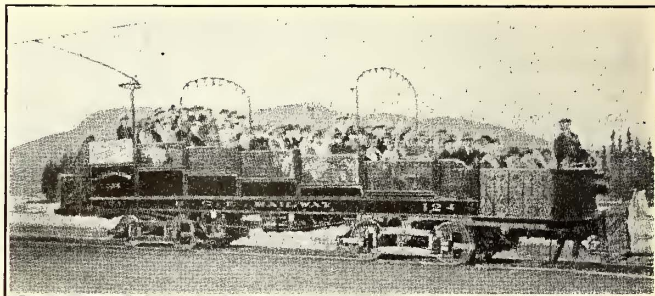
### Safety Car in Europe

THE International Street & Interurban Railway Association has just issued a leaflet containing a digest of an article descriptive of the safety car, which appeared in a recent issue of the Dutch technical paper *Telegraaf*. The immediate cause of the bulletin was an accident which happened in Brussels owing to sudden illness of the motorman on a two-man car. The article describes the well known advantages of the safety car for city service and concludes: "In general it might be said that the operation of these cars has had a favorable influence on both the cost of operation and on the receipts."

### Observation Car in Vancouver

THE British Columbia Electric Railway is now operating an observation car on its lines. The car is a double-truck flat car with cross seats, side rails and no top, attractively upholstered and lighted by arches extending across the car over the seats.

The car operates from May to October and makes about five daily trips in and about Vancouver. The twilight trip is said to be especially delightful. The route taken is through the industrial sections, residential suburbs, Japanese quarter and on out to Point Grey, Kerrisdale and Shaughnessy Heights. From the



VANCOUVER OBSERVATION CAR

latter point a beautiful view of the Fraser Valley and Mount Baker, 90 miles away, is obtained. The fare is 50 cents for the trip.

This company also issues an attractive illustrated folder entitled "Electric Trips Around Vancouver," which is full of valuable information for the tourist. The folder suggests trips to the adjacent beaches, to the city parks, to Fraser Valley and to attractive cañons and scenic beauty spots in adjacent territory. In all a five-day tour is suggested, with definite daily schedules.

### Spain to Develop Water Power

THE Spanish Electricity Commission, appointed by the government in 1918, has made a report to the Ministerio de Fomento advocating the development of the national water power and its use through a high tension network for industrial and railroad electrification.

A single network covering the whole country is favored, as in the north high water occurs in the spring and summer, while in the south it occurs in the fall and winter, thus allowing a better use of the flood waters. Considering only developments of more than 20,000 the commission estimates the national water power at 2,000,000 kw., of which 500,000 kw. is in the Pyrenees, 200,000 kw. from the Ebro River, 150,000 kw. in Galicia, Asturias and Leon, 300,000 kw. from the Tejo River and the remainder from the southern rivers.

The electrical network will form an irregular quadrangle, with corners at Oviedo, Barcelona, Valencia, Granada, Sevilla, Alcantara. Feeder lines will be run to other cities. The total length of main transmission lines will be 3,000 miles, using 120,000-volt, three-phase, fifty-cycle current. All the lines are to be in duplicate on the same tower and the wires are in three standard sizes, 3 mm. x 100 mm., 3 mm. x 75 mm. and 3 mm. x 50 mm. The estimated cost exceeds 130,000,000 francs.

The state will regulate the development and undertake the construction, maintenance and control of the power transmission network. Rates will be fixed by the state on a cost-of-service basis, using a flat rate based on investment and independent of energy used.



# News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION  
PERSONAL MENTION

## Construction Started

City of Detroit Going Ahead with Municipal Line Despite Opposition from Property Owners

Plans of the Street Railway Commission of Detroit, Mich., for the construction of the crosstown line provided for in the Couzens system of municipal railways are meeting with opposition from home-owners on Eliot Street, one of the aristocratic down-town streets which the Charlevoix-Buchanan crosstown line is to traverse. The residents on Eliot Street contend that there are other streets near by given up entirely to business which can be used to better advantage.

Owing to complaints against the construction of the proposed lines on Burlingame, Clairmount and Owen Avenues, the city decided that the protests warranted an investigation into the possibilities of determining upon a less objectionable route. The railway commission will make a field survey and report to the Council on the advisability of using alternative streets for the lines. The commission was to pass a resolution next calling for bids on this second crosstown line, the Clairmount-Owen line. The complete system as planned to be carried out by the city is planned to include five crosstown lines.

### WORK BEING PUSHED

The Clairmount-Owen line is to connect the proposed Petosky Avenue line on the west side with a proposed north and south line on Conant Avenue, and will run easterly from Grand River Avenue on Joy Road, Clairmount, Owen and Holbrook Avenues, crossing Woodward Avenue on Clairmount.

Work is to be pushed on the St. Jean line, the contracts for paving, grading and foundation work involved in the municipal line having been approved by the Council. In answer to Councilman Bradley's question as to why the Detroit United Railway had been prevented from completing the St. Jean line and at the same time allowed to complete the Twelfth Street line, Chairman Ellis for the commission replied that the Detroit United Railway would not be allowed to resume operations on St. Jean since that work had been started by the Detroit United Railway and left practically dormant for three years, while on the Twelfth Street line work was nearly completed when the city gave permission to finish it.

The Street Railway Commission expects to complete the St. Jean line as soon as the Detroit United Railway would have done it notwithstanding that the Detroit United Railway prom-

ised to have it in readiness by Sept. 30. It is not intended to tear up the street until the project can be carried straight through to completion. Councilman Bradley charged that since the Detroit United Railway's operations were stopped on the St. Jean line, the city has done nothing and he objected to tearing up the street until the commission was ready to lay rails. The Charlevoix line was referred to. A trench was started the day after election, some concrete poured in and some pictures taken and nothing done since the contractor completed excavations near Alter Road. Mr. Bradley branded this as grandstand play which might just as well have been deferred.

## Municipal Railway Denies Wage Advance

The budget committee of the City Council of Seattle, Wash., by a vote of six to three, recently denied the request of the trainmen of the Seattle Municipal Railway for a 25-cent increase in wages. While the men had asked for no definite increase, in informal discussion with Councilmen they indicated that a general wage raise of 25 cents a day for employees who have been in the service for more than a year was desired. The present scale calls for a daily wage of \$4.75 for new men and \$5 after the first six months, and \$5.25 after the first year.

Proposals to raise the wage of the men were opposed by taxpayers who appeared before the committee. They declared the recent fare increase from 5 cents to 6½ and 10 cents was put into effect with the understanding that there would be no additional overhead expense against the railway. Representatives of the men declared that the increase would not be a charge against the tax levy, but would be borne out of the operating revenues of the railway.

When questioned as to the effect of the proposed fare increase on the earnings of the railway D. W. Henderson, general superintendent, stated that the wage advance would add between \$120,000 and \$130,000 to the payroll. He urged that if any increase was adopted only two wage rates be provided for, \$5 and \$5.50. Members of the Council indicated that if it is learned at a later date that the new fare will materially add to the revenues of the railway increases for the car men might be considered by the Council at that time.

The men in their appeal also referred to the possible effect of jitney regulation in increasing the railway revenue.

## B. R. T. Men Talk Strike

Receiver Garrison Refuses Demands for Pay Rise and Eight-Hour Day  
—Closed Shop Asked

Employees of the Brooklyn (N. Y.) Rapid Transit Company have announced that they will go out on strike if their demands for a substantial increase in wages and changes in working conditions are refused. Announcement that the men would take this action followed rejection of their demands by Lindley M. Garrison, receiver for the B. R. T. lines. Obtaining no satisfaction from Mr. Garrison the union officials have appealed to Federal Judge Julius M. Mayer, who is in charge of the company's affairs, for a hearing.

The present contract under which the men are working will expire on Aug. 28. On July 28 they presented to William S. Menden, general manager of the company, a new contract providing for an eight-hour day with a limit of twelve hours for those on swing runs, and time and one-half for all overtime. They also asked for a six-day week and a twelve-hour rest period after each day's work.

The wage scale which has been demanded by the men as included in their formal request is as follows:

For surface motormen and conductors, from 84 cents to 92 cents an hour, the present schedule being from 52 to 62 cents; for switchmen and car cleaners, 55 cents an hour; for Sunday and holiday work, 10 cents an hour extra.

For elevated motormen, 87 cents to 90 cents an hour, the present scale being from 54 to 57 cents; for guards on rapid transit lines, from 82 to 85 cents, the present scale being from 49 to 52 cents an hour.

### NEGOTIATIONS USELESS

In refusing these demands Mr. Garrison stated that their acceptance by the company would mean an increase in the system's payroll of at least \$15,000,000 annually. He also declared that it would result in a closed shop, to which he could not consent. In his letter to the trainmen's representatives the receiver said in part:

Under the circumstances there can be no point at this time in entering into any negotiations in regard to these proposed agreements. I have always refused to make a closed shop, I have always refused to enter into a contract with anybody other than a committee of employees. As you know I have taken this course under instructions from the court, whose representative I am.

Until the court changes its instructions in this respect it is useless to have any negotiations because I could not under the circumstances enter into any such agreement.

I recently, as you know, voluntarily offered an increase of wages which went to the limit of the financial means at my disposal. Even if you were asking me to modify merely the existing agreement with the employees, I could not possibly entertain the suggestions contained in the papers submitted. Under the most favorable construction of the different demands it would add a total of at least \$15,000,000 to the existing wage payments.



## Municipal Ownership Defeated at Toledo

### People of Ohio City Unwilling to Sail the Uncharted Seas of City Ownership—Company Suit Still in Court

The twin bond ordinances authorizing the expenditure of \$7,000,000 for a municipal railway and a bus system were decisively defeated by the voters of Toledo, Ohio, at the election on Aug. 10. The \$3,000,000 ordinance to "acquire" a transportation system was lost by a vote of 8,535 in favor and 12,468 against. The \$4,000,000 ordinance to "construct a transportation system" had a like fate. It received 7,901 votes in favor and 11,532 against. The first move to get the cost-of-service ordinance out of the Council committee on railroads and telegraph was made by Mayor Schreiber on Aug. 11 when he announced that he would ask Council to pass it at its next meeting on Aug. 23. This may insure the measure coming before the electors at the general election on Nov. 2 or at a special election before that time.

**T**HE twin bond ordinances proposed by the municipal ownership commission for the settlement of Toledo's railway difficulties were in for a stormy career even if they had been ratified by the voters. This was evident the day before the election. The Toledo Traction, Light & Power Company, a holding corporation for the Toledo Railways & Light Company, the operators of the railway system, and several other electric and gas properties at Toledo, came into court after the suspension of the injunction against the twin ordinances had been granted by the Circuit Court of Appeals and asked leave in a motion to file an amendment and supplement to its bill of complaint.

#### COMPANY WANTED CITY ENJOINED

The amendment was deposited with the clerk for filing the day before the election. It brought the city of Toledo into the case as a joint defendant with the board of elections and offered much additional evidence seeking to make vague the validity of the bonds, should they be approved and issued.

The company held that the city had not complied with the state code regarding the publishing of ordinances in pamphlet form; that voters had been deprived of voting on the two ordinances between July 24 and Aug. 4 while the injunction of the District Court was in effect, and that already the action of the city had tended to depreciate value of company securities.

The company also asked the District Court to enjoin the board of elections from certifying the result of the vote on the twin bond ordinances, and sought to restrain the city from issuing any of the bonds the ordinances provide for and from levying any taxes under the measures.

#### LEGAL QUESTION BEFORE COURT

The Circuit Court of Appeals at Grand Rapids last week did not pass upon any of the legal questions involved in the case as brought out in Judge Killits' court at Toledo. The circuit judges merely suspended the effect of the injunction.

The company has announced that twelve lines are not paying their own way at the present fare rates. Only five are operated at a profit. These five bear the burden of supporting the system and the gross profit is cut

down to a very low figure, company experts declare.

The plan of the city, if the ordinance had been successful, was to appoint a commission to lay out the new system for Toledo. Many of the members of the commission relied almost wholly on the bus end of the proposed double system, and counted on the railway to remove its tracks whenever any move was made to dismember the present railway system.

The members of the cost-of-service commission and two of the three daily papers supported the cost-of-service plan as the logical way to protect the interests of both municipal ownership enthusiasts and the traction company. As stated previously, this plan may now be submitted at the November presidential election.

#### Bridgeport Continues Trolleyless

Jitneys are still running in the city of Bridgeport, Conn., and the trolley cars are still off the streets, two weeks and a half after they were withdrawn by order of the company's trustees. Storekeepers in Bridgeport report a loss of patronage of from 25 to 50 per cent since the cars stopped running, most of it due to the fact that the jitney routes do not extend out beyond the thickly populated areas of the city. The fact that women shoppers cannot carry bulky packages in the jitneys is also a factor in the reduced volume of trading, it is said.

Out of the welter of the present more or less haphazard bus service in Bridgeport is likely to grow an organized bus system which will be responsible for maintaining dependable service. At least this is the promise of J. B. Schwartz, president of the jitney men's association. He says that within a few days a jitney bus operating company will be incorporated which will provide for transfers at 2 cents each. Mr. Schwartz predicts that the new corporation will include in its membership a majority of the present bus owners. He says that the tentative plans so far made by the men who will enter the new company call for the purchase of twenty-five buses of modern type, equipped with cash boxes. It is possible that the uniforming of operators will follow later.

According to Mr. Schwartz it is the intention of the incorporated company

to maintain the 5-cent fare. He feels that the absence of officials at large salaries and the purchase of oil, gasoline, spare parts and general supplies at wholesale by the corporation will enable the individual bus owners to operate at a profit at the present rate. According to Mr. Schwartz a flock of inspectors are working all over the city to see that the buses are in repair; that the drivers do their work properly, and that the public does not suffer any unnecessary inconvenience.

So far as the Connecticut Company is concerned it again reported on Aug. 10 that "there is nothing new in the situation in Bridgeport."

In the other cities of the State the anti-jitney feeling is getting stronger. The Waterbury Chamber of Commerce issued a report on Aug. 10 advocating the removal of jitneys from all streets on which the Connecticut Company has tracks. The Hartford Chamber of Commerce has appointed a committee to take up the matter, and from what members of the committee say, it is expected they will recommend action like that of the Waterbury Chamber. The Norwich city authorities are also considering ways and means of curbing the buses.

#### Legislative Sanction Necessary

The Supreme Court of Iowa has just ruled in the Ottumwa Railway & Light Company case that a permanent fare cannot be fixed in a franchise without legislative sanction and that City Councils can change fares.

#### Cincinnati Wages Being Arbitrated

The trainmen in the employ of the Cincinnati (Ohio) Traction Company who are members of the Amalgamated Association are demanding an increase of 80 per cent over present wages, double time for overtime and other conditions. The present wage scale in Cincinnati is 2 cents an hour over the rate allowed by the War Labor Board. That body, in an award effective on Nov. 21, 1918, allowed the men an increase of approximately 30 per cent over then existing wages. On July 1, 1919, when the scale was reopened for adjustment, the company settled by giving a 2-cent increase, making the scale for trainmen 45, 48 and 50 cents.

The present demands are being arbitrated by George Dent Crabbs, president of the Philip Carey Manufacturing Company, who represents the railway; James A. Wilson, president of the Pattern Makers' International Union, who represents the men, and Prof. Alonzo Tuttle, a teacher of law in the Ohio State University. Professor Tuttle was appointed by the Industrial Commission of Ohio, which named him pursuant to terms of the contract between the company and the men. The arbitrators named by the company and the men had been unable to agree upon the third arbitrator.

W. Kesley Schoepf, president of the company, declared in his letter to the



union rejecting the demand that they are out of all proportion, and that under no circumstances would he approve expenditure on the part of the company that would add to the burdens of the car rider.

### New Akron Franchise Drafted

A new franchise has been prepared by city officials of Akron, Ohio, for the city line of the Northern Ohio Traction & Light Company. It is said to contain in legal form all the points on which the city and company have agreed. Director of Law Hagelberger, City Manager Laub and E. E. Brownell, expert, prepared the draft.

The measure was submitted to the public utilities committee of the City Council on Aug. 7, and such changes as thought necessary will be made. Copies will be sent to the company. The franchise will be made public as soon as an agreement is reached by the city and the company.

It is reported that the franchise provides for an initial rate of fare of 5 cents. This will be increased or decreased at the end of stated periods to cover the cost of operation, make improvements and extensions, as the city may direct, and provide a return of 7 per cent on the company's stock.

At the end of each five years the city and company may agree upon a change in the return on the stock.

### Pay Increases in Los Angeles

Effective on Aug. 16 the Pacific Electric Railway, Los Angeles, Cal., will increase the pay of all its employees, making an increased payroll of \$900,000 a year. The increase is made by the company in recognition of good service on the part of the employees, and in the face of a growing deficit. Employees of the transportation, mechanical, electrical and maintenance-of-way departments will receive an increase of approximately 5 cents an hour. The new scale is as follows:

City service, 50 to 53 cents an hour.

Interurban single-track, 55 to 58 cents an hour.

Interurban double-track, 52½ to 55½ cents an hour.

Freight service, 62 cents an hour.

The Los Angeles Railway will also increase the pay of its trainmen and mechanical department employees on Aug. 16. The pay increases there total more than \$500,000 a year. The Los Angeles Railway increases will be from 5 to 9 cents an hour and with the bonus system recently established employees who have been in the service two years or more may earn as much as 60 cents an hour. The new scale of that company for motormen and conductors will be as follows:

First three months, 50 cents an hour.

Remainder of first year, 51 cents.

Second year, 52 cents.

After second year, 54 cents.

Additional pay of 2 cents an hour will be added on shuttle lines, and 4 cents on downtown safety car runs.

## Denver Union Men Defiant

### Override Their Executive Committee and Indulge in an Orgy of Disorder—Federal Troops on Guard

The union employees of the Denver (Col.) Tramway were still on strike on Aug. 12 in defiance of their executive committee. This was in fact a reversal of a decision which had been made previously to return to work. On Aug. 7 the attorney for the union announced to Judge Whitford of the District Court that the strike had been called off by a vote of 973 to 3 in connection with the court's order. The union was given until Aug. 12 to "square its actions with its words." On Aug. 10 meetings of the union officials, other labor leaders, officers of the tramway and city and state officials were held. F. W. Hild, general manager of the company, announced that the company would take back those who had been on strike, except that certain individuals would not be re-employed, provided the men filed individual applications. The 58-cent scale will be paid pending the injunction proceedings in the Supreme Court. The men were given until midnight, Aug. 12, to file applications so as to maintain their seniority rights.

**E**FFORTS to have the union leaders negotiate with Mr. Hild were rebuffed by him. The company will not recognize or make any agreement with any labor union. On the afternoon of Aug. 11 a mass meeting of the union was held at which the executive committee recommended that the men go back to work and accept the terms offered by the tramway. The men refused to go back to work unless they were taken back in a body and the union was recognized. The vote on these matters stood at 771 to 36.

The tramway immediately issued a call to all other men who had applications for employment on file to report at once. It also began advertising for additional men.

### VERY SERIOUS DISORDER

Unusual disorders have attended the attempts by the company to operate cars. On Aug. 5 the operation of twelve cars was stopped by a mob of 5,000 men and women from the city's steam railroad shops and other unions. The crews of two cars in the downtown district were taken off the cars and beaten up by the mob and the cars demolished. Later the mob stormed the plant of the Denver Post and wrecked it. It then surrounded four cars in the residence section, tipped them over and smashed them up, beat up the crews and attempted to burn the cars. The police were unable to cope with the rioters.

Later that night the mob attempted to storm and burn the South Division carhouse, occupied by 150 strikebreakers; two of the rioters were killed and twenty-four wounded. The following day 2,000 citizens were sworn in as special officers and armed. No cars were run during the day. A mob at the East Division carhouse after menacing the property all evening rushed the place with bricks, pieces of iron and revolvers. They were fired upon by the guards. Three rioters were killed and fourteen wounded. Another mob made elaborate preparations for an attack on the South Division carhouse of the company at the same time.

The power and light wires to the carhouses were cut and dynamite bombs thrown into the car yards. An attempt was made to fire the carhouses. Another mob threatened the Tramway Building, but was held back by the police.

### TROOPS RUSHED TO CITY

Early on Aug. 7 250 troops from Fort Logan were rushed to the city by motor trucks and took over control. The following day 500 regular soldiers arrived from Camp Funston, Kan., to augment the forces from the local fort. Each car was escorted by an automobile load of soldiers. Major General Leonard Wood arrived from Chicago on Aug. 9 to make a personal investigation of the situation.

More than 160 cars were operated on Aug. 10, but no trailers. Two hundred cars were operated on Aug. 11, or forty more than normal. There has been no rush-hour service since Aug. 9. The cars have been heavily loaded with passengers.

The company has approximately 600 strikebreakers on the system and has received sufficient requests for employment from former employees and new men to enable it to operate the full system very shortly.

### COURT SAYS MEN MUST RETURN

The District Court on Aug. 12 gave the executive committee of the union until Aug. 16 to persuade the men to return to work, or to resign as responsible heads of the union.

Full service was given on Aug. 13 on all lines, with the exception of one city route and one interurban.

### No New Louisville Franchise Ready

W. H. Kaye, member of the executive committee of the Louisville (Ky.) Railway, announced to the Council during the week ended Aug. 7 that the company had no ordinance prepared at this time to offer as a substitute for the service-at-cost measure withdrawn by the company at the last Council meeting. William T. Baskett, assistant city attorney, said the city had no ordinance to submit.



## Wage Increase in Richmond

Official notice of an increase in the wage scale of the trainmen of the Virginia Railway & Power Company has been made by C. B. Buchanan, vice-president and general manager, as follows:

The City Council having granted the 6-cent fare, effective on Aug. 1, 1920, and thereafter so long as the 6-cent fare is in effect, the wage scale of motormen and conductors will be: For men in service for the first three months, 43 cents an hour; for men in service for the next nine months, 45 cents an hour, and for men in service thereafter, 47½ cents an hour. "Safety car" operators will receive 5 cents an hour in addition to the above rates and scales.

In view of the fact that the company has not as yet applied for a 6-cent fare in Petersburg, as anticipated, it is deemed just that the same rate and scale as applies in Richmond, Norfolk and Portsmouth, where the 6-cent fare has been asked for and granted, be also made effective in Petersburg as of Aug. 1.

It is understood that should the company apply for a 6-cent fare in Petersburg, and the same should be denied, the old rate and scale will apply. Certain conditions have prevented the company from making the 6-cent application in Petersburg to the present time, but such action in the near future is probable. In consideration of the employees, however, the company decided that its failure to make the application should not be reflected in their wages, and the Petersburg scale, consequently, has been raised to the Richmond level, with the provision that the application, when presented, is accepted.

## A Mighty Poor Advertisement

The Los Angeles *Saturday Night* published an editorial "Squelch the Trouble Breeders" in a like issue. That paper said:

Recently, in the newspapers of this city, the Los Angeles Railway appealed to the public for fair play. The appeal had to do with the rerouting of cars in an effort to relieve congestion and to avoid the necessity of a fare increase. Those responsible for the rerouting of the cars, an action mainly due to the importunities of strap-hangers and the hostile attitude of certain newspapers, paid no attention to the prayer of the corporation. Instead, they redoubled their efforts to incite trouble and seemed to enjoy the experience of "eating their own word."

That a corporation should deem it necessary to appeal to those it is trying to serve for fair play is a mighty poor advertisement for the city. There seems to be a fault-finding "brick-throwing" epidemic on. The people, incited by inflammatory and hysterical newspaper articles, are kept in a constant state of irritation, well-meant efforts on the part of those criticised to remedy conditions are met with abuse instead of a helping hand, and officials who sincerely are trying to do their duty are denounced in vitriolic terms.

Something should be done to squelch the trouble breeders. It looks like another job for the Chamber of Commerce.

## Wages Increased at Memphis

Judge McCall has authorized a new wage scale for employees of the Memphis Street Railway, previously agreed upon at a conference between the receivers of the company and representatives of the union. The order authorizing the increase was signed after a petition setting out the terms of the proposed contract was presented to Judge McCall by Lovick P. Miles, attorney for T. H. Tutwiler and F. S. Elgin, receivers of the company.

The increase is to remain in effect for one year from Aug. 1, 1919, to July 31, 1920, and will mean an increased expenditure on the part of the company of \$150,000 a year. Under the new scale motormen and conductors who work nine hours a day are paid for the first year at the rate of 47 cents an hour, or \$110 a month. Second year men get 52 cents an hour, or \$131.68 a month. Third year men get 57 cents an hour, or \$133.38 a month.

Under the old scale the monthly salaries were for first year men \$101.79; for second year men, \$105.30, and for third year men \$112.32.

Similar increases for the men who work ten hours a day bring the first year men from the old rate of \$113.10 to \$122.20; the second year men from a rate of \$117 to \$135.20, and the third year men from \$124.80 to \$148.20.

## Settlement Up to Mayor

Mayor J. E. Meyers of Minneapolis, Minn., has before him for action an emergency ordinance passed Aug. 6 by the City Council granting the Minneapolis Street Railway a 6-cent fare until Dec. 15 and a 7-cent fare with four tickets for 25 cents thereafter. The ordinance supersedes an ordinance granting a 7-cent fare at once, which was returned to the committee by the Council. The Mayor's position is problematical.

If the present ordinance becomes effective it is understood that the company will accept it and will grant the trainmen a wage increase as recently suggested by the board of arbitration. Possibility of the strike scheduled for July 1 unless the wage advance was granted still exists if the Mayor vetoes the ordinance.

In St. Paul the deadlock between city and company is still on. A physical valuation is under way and as matters now stand the City Council cannot grant the increase of fare voted by the people last spring until the company improves the service. The company reports that it cannot improve the service at the present trainmen's wage. The trainmen of the St. Paul City Railway are still waiting for the city to act on an increased fare so the company can pay the wage suggested by the arbitration board.

## Democrats for Home Rule

The Democratic state platform in New York contains the following planks on public utilities and increased rate regulat on:

We favor the regulation of public utilities so that sufficient and safe service may be rendered the public at a cost which will yield not more than a fair return upon the capital actually and honestly invested.

We favor investing the Public Service Commissions with sufficient power to enforce their own orders and suspend proposed increased rates during investigation by the commissions.

We favor the enactment of legislation, defeated at the last session of the legislature by the Republican senate, placing upon a public utility corporation demanding increased rates the burden of proof to show the reasonableness of such proposed increases, and removing that burden which now rests upon the public.

We are opposed to legislation permitting state commissions to impair or modify contracts made between cities of the state and railway companies fixing rates of fare. Measures violating this principle were strenuously advocated by Republican legislators and by a Republican speaker of the Assembly in 1919 and 1920. Any modification of such contracts should be made by the contracting parties in accordance with the majority sentiment of the community affected, and they should not be abrogated by the interference of state agencies.

## Short Strike in Auburn

The demands of 161 striking motormen and conductors of the Auburn & Syracuse Railroad, Syracuse, N. Y., have been met by the company and service was restored on Aug. 8 in the city of Auburn and on the suburban line to Syracuse.

The men struck on Aug. 4 after notifying the company that if immediate action was not taken to increase their wages they would quit. The officials did nothing immediately and the men kept their word. On Sunday morning a conference was held between Patrick H. Downey, state mediator; City Manager John Jaeckel of Auburn and Attorney Frank M. Leary, representing the Amalgamated Association. Lawrence Lippitt represented the company.

Motormen and conductors on the city lines in Auburn will receive 60 cents an hour as maximum, starting at 56 cents, three months later 58 cents, to continue for nine months before reaching the maximum.

Men employed on the suburban lines will receive 62 cents an hour maximum. Freight and express men will get a rate 3 cents an hour higher. Freight warehouse men will receive 50 cents an hour and substation operators \$5.20 a day. Shop men now receiving less than 50 cents an hour will be increased to that rate.

## Court Decides Against Eighty-Cent Gas Law

The Consolidated Gas Company, New York, N. Y., won its long fight on Aug. 4 against the 80-cent law when a decree rendered by Judge Learned Hand, in the Federal District Court at New York, granted the company the right to charge \$1.20 for every 1,000 cu.ft. until March 1, 1921.

The injunction restraining city, county and state officials from enforcing the old gas law of 1906, which has been in effect, lasts, however, for five years. After March 1, it is understood, unless the Supreme Court reverses Judge Hand's decision, he will set the price the company may charge from that time on. The new rate became effective at once. The excess over present rates paid by consumers will be placed in trust until a final decree is rendered by the Supreme Court if the defendants appeal.

Temporary injunctions restraining the state, county and city authorities from enforcing the law were granted by the Federal District Court on June 29, as noted in the *ELECTRIC RAILWAY JOURNAL* of July 3, page 36.



### Seeks to Restrain Operation

The city of Martins Ferry, Ohio, filed a petition in the federal court at Columbus on Aug. 4 asking the court to enjoin the Wheeling (W. Va.) Traction Company from operating in the city of Martins Ferry.

The petition asks further that the company be required to remove its tracks, poles, wires and other equipment and property used in connection with its railway from the streets and to leave the streets in proper condition after so doing.

The petition sets forth that fares were increased in June, 1919, contrary to provisions of the franchise, from 5 cents to 10 cents between Martins Ferry and Wheeling and Martins Ferry and Bellaire, and that the company now proposes to increase rates again to 12 cents cash, with a 10-cent ticket fare, between Martins Ferry and Wheeling, and to 16 cents cash, with a 13½-cent ticket fare, between Martins Ferry and Bellaire.

The old franchise under which the company operated expired on Aug. 2. Federal Judge John E. Sater will return to Columbus on Aug. 15 to consider the case.

## News Notes

**Trackmen and Oilers Strike.**—Trackmen and oilers employed by the Monongahela Valley Traction Company, Fairmont, W. Va., went on a strike on Aug. 2 for an increase in wages. The men are asking an increase of from 38 cents to 50 cents an hour.

**Mr. Young on Engineering Council.**—The American Society for Testing Materials has appointed C. D. Young as its representative on Engineering Council to succeed Albert Ladd Colby. Mr. Young is general supervisor of stores of the Pennsylvania System, and vice-president of the American Society for Testing Materials.

**Fire Destroys Bay State Cars.**—Twenty cars belonging to the Eastern Massachusetts Street Railway, Boston, Mass., were destroyed in a fire which burned the company's carhouse at North Abington, Mass., on July 26. The cars destroyed included nine of the double type, three short cars, five snow plows, a line wrecker, a sand car and a flat car.

**More B. R. T. Tubes Open.**—Two new subway tubes under the East River, New York, N. Y., one connecting Manhattan Island with Brooklyn and one connecting Manhattan Island with Queens, opened on Aug. 1. Both are to be operated by the Brooklyn Rapid Transit Company. The opening of these rapid transit lines will place in operation construction costing \$36,000,000.

**Chelsea Wants "L" Service.**—A movement is under way among citizens of Chelsea and Revere, Mass., looking to the furnishing of electric railway service to these communities by the Boston Elevated Railway. The towns are now served by the Eastern Massachusetts Street Railway, which, under the proposed plan, would discontinue operation of the lines. The Chelsea division is said to be operated at a loss.

**Delays Work in Radials.**—The Ontario Hydro-Electric Power Commission has informed the Ontario Government that it will not make any further commitments on radial railways, pending the report of the royal commission appointed to investigate the radial projects. The commission claims to have misunderstood the Government's request at first, and to have gone ahead with some details of the radials in the District of St. Catharines. However, the possibility of friction has now been removed.

**Work Started on New Terminal.**—Work has begun on the Washington, D. C., terminal of the Washington, Baltimore & Annapolis Electric Railroad. It is the intention of the company ultimately to build a \$2,000,000 station and hotel, but for the present the land recently acquired will be cleared of buildings and tracks laid so as to discontinue the practice of making the terminal stop in a public street. The new terminal is within a block of the heart of the business section of Washington.

**Editorial Reprint Sheet Issued.**—The Illinois Committee on Public Utility Information has published under date of July 15, 1920, Editorial Reprint Sheet No. 2, containing fifty-three editorials from various newspapers in Illinois. These comments express the viewpoint of the people in widely separated municipalities throughout the State on all phases of public service work. A cursory glance at some of the remarks contained in these editorials proves how anxious the public is for the growth of all modern utility even though the price paid for it must necessarily be high.

**Chicago Officials Play Golf.**—The officials of the Chicago (Ill.) Surface Lines recently enjoyed the first golf tournament of the season at the Harlem Golf Club. Practically all of the executives, from President Henry A. Blair down, joined in the contest. About three such outings in the summer have become one of the customs of the company. The winner of the first tournament this year was M. B. Orde, treasurer, who had the low gross score of 85, against par 71. Mr. Evenson, assistant to the superintendent of transportation, was also a prize winner, with the low net score of 72.

**Improvised One-Man Cars Cause Strike.**—Ashtabula, Ohio, is entirely without local railway service due to a strike of the employees of the Ashtabula Rapid Transit Company declared on Aug. 4. The men left their jobs

because of an order posted on Aug. 3 putting into effect a one-man crew system. This was done as a retrenchment measure. The railway has been purchased by the city, but the transfer of the property to the city has not yet been completed. A statement from the men said they did not consider the cars adequately equipped for one-man operation.

**To Fill Traffic Vacancy.**—The United States Civil Service Commission announces for Sept. 7 an open competitive examination to fill the position of director of traffic. A vacancy at Curtis Bay General Ordnance Depot, Maryland, at \$2,200 to \$2,600 a year, and vacancies in positions requiring similar qualifications throughout the United States at these or higher or lower salaries will be filled from this examination. The duties of the appointee will consist of the organization and supervision of traffic details of outbound and inbound freight, movements by rail and water, and handling the railroad operating force in the depot.

**Pay Rise for Queens Men.**—William O. Wood, president and general manager of the New York & Queens County Railway, New York, N. Y., has announced an increase of approximately 10 per cent in the wages of the road's conductors, motormen and inspectors in the operating department and shopmen and linemen in the repair department. This will add in the neighborhood of \$25,000 a month to the company's payroll. The increase was made voluntarily without any demand by the employees. In a recent communication to the Queens Borough officials Mr. Wood said the company was not making its operating expenses and that it was carrying passengers at a loss and for that reason it would be impossible to make repairs to its tracks and repave streets as ordered by the Borough President.

**Electrical Workers Get 15 Per Cent Increase.**—An increase in wages of 15 per cent to electrical workers employed by the Toronto (Ont.) Suburban Railway is recommended by a majority report of the board of conciliation which inquired into the dispute between the company and this class of its employees. The recommended increase is to all employees who are now paid upon an hourly basis. In regard to all employees who are paid by the month it is recommended that they should all receive an increase of \$10 a month. When employees are called upon to do extra work they are to receive a minimum time allowance of not less than two hours, but only one minimum allowance shall be paid for in any one day. It is also recommended that seniority coupled with efficiency shall be the basis of promotion. The report is signed by Judge A. Barron, chairman, and George Kelley, the representative of the company. Louis Braithwaite, the representative of the men, in a minority report, objects to the findings and recommends a higher rate of wages for the electrical workers.



# Financial and Corporate

## American Railways Readjustment Plan Amended

Announcement has been made of an amendment to the plan submitted under date of July 31 for the acquisition by a committee of the holders of the 4-6 per cent bonds of the National Properties Company of all of the common stock of the American Railways, Philadelphia, Pa., now deposited as security for bonds of the National Properties Company for a cash subscription of 17½ per cent of the face value of the National Properties Company bonds, for which each subscriber will receive a like amount of 7 per cent income bonds of the American Railways. Upon the acquisition of common stock of the American Railways, and the distribu-

## Utility Securities Analyzed

**Cost of Money Excessive—Confidence Must Be Restored to Avert a National Calamity**

The First National Bank of St. Louis recently made an interesting analysis of public utility finances and rate of return. This analysis points out the fact that in economic history prices pass through periods extending over several years, in which the level is upward or downward. Custom is a strong force in controlling prices, and governmental regulation only adds another force to restrain any change in price. The combined condition of customary price and governmental regulation is found in the case of public utilities. What is the situation, then, of many of our public utilities under prevailing conditions of an increasing price level, a regulated rate of return, an unsympathetic public, a selfish capital, seeking, as always, the best possible investment, with an increasing number of bidders for the use of capital and a decreasing amount of capital for sale?

### COST OF MONEY TO PUBLIC UTILITY CORPORATIONS

In the first place, there is a tendency toward a deterioration of the physical plant and force. In the second place, extensions cannot be made with accustomed and desirable regularity, due to the high prices and dearth of material and labor, the reduced earnings, and the lack of new capital. In the third place, the most significant of all of these effects is the refusal of new capital to flow into this field.

The credit of public utility corporations on the whole is at present more or less in disrepute so far as the general investor is concerned. The highest grade of American public utilities can be purchased in the open market at a basis that will yield the investor anywhere from 1 to 2 per cent per annum more than the same sum would yield were the investment in any other similar grade of corporation security. The published table shows the changes in bond yields since before the war.

The average yield on seventeen of the highest grade public utility securities between April, 1919, and December, 1919, was found to be 6.11 per cent. The average yield of seventeen utility securities from January, 1920, to May 1, 1920, was found to be 6.75 per cent. On the other hand, the average yield of 3 highest grade railroad bonds from April, 1919, to December, 1919, was found to be 5.52 per cent. The average yield from January, 1920, to May 1, 1920, was found to be 5.75 per cent, thus showing that even the highest grade first mortgage public utility securities have recently been selling at a

price which would yield the investor a full per cent more income per annum than could be obtained from the same class of railroad securities. In addition to this, the new securities of a growing concern seldom rank as high in regard to the securities behind it as do the seasoned issues secured by first mortgage on the property. How seriously this is handicapping the development and maintenance of public utilities is evidenced by the following table:

COST OF MONEY TO PUBLIC UTILITY CORPORATIONS, EXCLUDING MARKETING PROFIT TO UNDERWRITERS—BOND YIELDS  
Period—Jan. 1, 1919, to May 14, 1920

| Period—Jan. 1, 1919, to May 14, 1920 |   |           |            |            |            | Yield,<br>per cent |
|--------------------------------------|---|-----------|------------|------------|------------|--------------------|
| (a)                                  | Average yield on twenty-three representative issues of \$1,000,000 and over, offered to the public between Jan. 1, 1919 and July 1, 1919. |           |            |            |            | 6.86               |
| (b)                                  | Average yield on twenty-four representative issues of \$1,000,000 and over, offered to the public between July 1, 1919, and Dec. 1, 1919. |           |            |            |            | 6.90               |
| (c)                                  | Average yield on seven new representative issues of \$1,000,000 and over, offered to the public in January, 1920.                         |           |            |            |            | 7.10               |
| (d)                                  | Average yield on eight new representative issues of \$1,000,000 and over, offered to the public in February, 1920.                        |           |            |            |            | 7.11               |
| (e)                                  | Average yield on seven new representative issues of \$1,000,000 and over, offered to the public in March, 1920.                           |           |            |            |            | 7.59               |
| (f)                                  | Average yield on seven new representative issues of \$1,000,000 and over, offered to the public in April, 1920.                           |           |            |            |            | 7.62               |
| (g)                                  | Average yield on five new representative issues of \$1,000,000 and over, offered to the public in May, 1920.                              |           |            |            |            | 7.83               |
| Bond Yields                          |   |           |            |            |            | Before War         |
| U. S. average 5 public utility.      | June, 1920  | May, 1920 | Jan., 1916 | July, 1915 | Before War |                    |
| U. S. average 5 railroad.            | 8.60  | 8.19      | 5.18       | 5.31       | 5.09       |                    |
| U. S. average 5 manufacturing.       | 6.14  | 5.86      | 4.51       | 4.71       | 4.42       |                    |
|                                      | 6.41  | 5.92      | 4.89       | 4.99       | 4.93       |                    |

In conclusion the article states that public utilities can be punished only at the expense of the general public. Improvements in regard to the condition of public utilities cannot be expected until their properties afford as attractive a field for capital investments as that offered in other fields of business enterprise.

## Receiver Pays 10 per Cent for Money

The petition of the Jacksonville (Fla.) Traction Company, granted by Judge R. M. Call of the United States District Court, Southern District of Florida, on July 27, to issue certificates of indebtedness amounting to \$143,690, with interest not to exceed 8 per cent, was nullified on July 31 by order of Judge Call. A supplementary petition of E. J. Triay, receiver of the company, to issue certificates of indebtedness amounting to \$65,000 and bearing interest at 10 per cent, was granted. The company found that it was impossible to sell the certificates of the company at an interest rate of 8 per cent and the additional petition was filed and granted. However, permission of the court is given only to issue certificates to the amount of \$65,000, the estimated cost of paving. The sum of \$78,690 which it was stated in the first petition was necessary for the payment of the State, county and city taxes is not provided for in the order granted on July 31.

tion thereof, the bondholders will become common stock holders of the American Railways to the full amount of the stock now deposited as security for their bonds provided they pay the subscription. This subscription will provide the American Railways with cash to an amount estimated to be not less than \$900,000. This amount is immediately required to take care of accounts payable by the American Railways and its subsidiaries.

In addition to these accounts the American Railways owes about \$3,500,000 of notes payable to banks and bankers. The plans further provide that this amount shall be converted into five-year 8 per cent notes secured by bonds of a subsidiary company to the extent of about \$4,550,000, thus funding the debt of the American Railways for five years.

It is announced that more than 90 per cent of the creditor institutions have accepted the plan of the committee subject to the American Railways being provided the \$900,000 in cash under the plan of the bondholders' protective committee. The plan will not be operative, however, unless the additional working capital is paid in. Such depositing bondholders as are unable or unwilling to provide funds for additional working capital will receive 30 per cent of the face of their bonds in common stock of the American Railways, and their place will be taken and cash provided by an underwriting syndicate.



## Good Middle West Report

**Total Income for Fiscal Year of \$2,463,567, While Expenditures Amount to \$265,949**

For the year ended April 30, 1920, the Middle West Utilities Company shows a total income of \$2,463,567. The expenditures amounted to only \$265,949. The balance was \$2,197,618. Interest on notes, bonds, etc., makes a total of \$1,126,975. The net income for the year was \$1,070,643, to be carried to the surplus account. The proportion of the subsidiary companies' aggregate undistributed surplus accruing to the Middle West Utilities Company was \$206,176. This made a total combined surplus of \$1,276,819.

### SUBSIDIARIES DO WELL

The gross earnings of the subsidiary companies show an increase over the previous year of \$4,721,638, of which amount \$197,202 was contributed by new properties. The earnings of the North West Utilities Company were included this year for twelve months, whereas that company was owned for only four months of the previous fiscal year. Increased earnings included from this company were \$1,206,031 more than in April, 1919. Eliminating these two items, the increase in the gross earnings was \$3,318,414, or 23.3 per cent.

The consolidated statement of subsidiary earnings for the year showed that gross earnings were \$18,362,673. Operating expenses, including taxes, were \$14,044,166. This makes the net earnings \$5,318,507, from which the rentals on the leased properties of \$305,193 were subtracted, leaving a balance of \$5,013,314. This balance, in addition to some earnings from subsidiary construction companies, gives a total of \$5,131,766. After bond debentures and other interest of \$2,953,893 and \$1,971,696 had been paid, the Middle West Utilities Company's proportion of surplus carried to the aggregate surplus of subsidiary companies was \$206,176.

### FISCAL YEAR CHANGED

The fiscal year of the company has been changed to end Dec. 31. The next annual meeting of the stockholders will be held March, 1921, when a report will be submitted covering the eight months' period from May 1 to Dec. 31, 1920. The balance sheet shows an item of indebtedness of the Middle West Utilities Company due to the Middle West Securities Company of \$3,100,000. A merger and consolidation of the two companies was authorized June 15, 1920. As a result this item of indebtedness has been eliminated.

## Local Control Planned

**Holders of Buffalo Bonds Outline Proposal for Distributing Assets of International Railway**

The bondholders' protective committee which is in control of the International Railway, Buffalo, N. Y., has submitted to the bondholders a plan for the distribution of the assets of the railway

by which they may acquire its stock and bonds, aggregating about \$20,000,000. The plan would place the control of the railway in the hands of a group of Buffalo bankers.

### DETAILED PLAN SENT OUT

The apportionment of the assets, however, is contingent on the bondholders paying what will be practically equivalent to an assessment of \$1,600,000. This sum represents money borrowed by the protective committee and additional funds which would be necessary to meet obligations of the company.

Bondholders who refuse to pay their

## A Return of 4.58 per Cent

**Six-Year Statement of Income of Chicago Elevated Railways Made Public Recently**

The consolidated income statement of the Chicago Elevated Railways for the years ended June 30, 1915, to June 30, 1920, inclusive, but with the last year based on eleven months actual results and an estimate for the month of June, 1920, without taking into account the increased wage scale which became effective on June 1, 1920, is shown in the accompanying table. The items in

|  | 1915               | 1916               | 1917                | 1918                | 1919                | 1920*               |
|--|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Revenues:</b>   |                    |                    |                     |                     |                     |                     |
| Passenger.....   | \$8,369,337        | \$8,861,360        | \$9,764,134         | \$10,263,349        | \$11,050,930        | \$14,451,605        |
| Other transportation.....                                | 519,610            | 444,915            | 464,068             | 463,569             | 553,423             | 639,109             |
| Non-operating.....                                       | 53,663             | 74,667             | 86,507              | 81,814              | 72,663              | 88,900              |
| <b>Totals.....</b>                                       | <b>\$8,942,610</b> | <b>\$9,382,942</b> | <b>\$10,314,709</b> | <b>\$10,808,732</b> | <b>\$11,677,016</b> | <b>\$15,179,614</b> |
| <b>Operating expenses:</b>                               |                    |                    |                     |                     |                     |                     |
| Ways and structures.....                                 | \$212,038          | \$268,543          | \$301,945           | \$391,710           | \$735,816           | \$1,377,101         |
| Equipment.....   | 398,142            | 528,828            | 584,620             | 663,753             | 849,138             | 1,203,629           |
| Power.....   | 1,088,103          | 1,171,464          | 1,340,294           | 1,312,027           | 1,323,385           | 1,468,196           |
| Conducting transportation.....                           | 2,422,434          | 2,668,076          | 2,881,132           | 3,187,212           | 4,361,239           | 5,942,209           |
| Traffic.....   | 6,908              | 20,651             | 27,855              | 26,225              | 33,874              | 27,978              |
| General and miscellaneous.....                           | 356,150            | 345,706            | 388,790             | 419,867             | 517,438             | 640,334             |
| <b>Totals.....</b>                                       | <b>\$4,485,775</b> | <b>\$5,004,565</b> | <b>\$5,524,636</b>  | <b>\$6,000,794</b>  | <b>\$7,820,890</b>  | <b>\$10,659,447</b> |
| Taxes, car licenses, etc.....                            | \$773,800          | \$789,662          | \$934,552           | \$1,012,094         | \$1,103,858         | \$915,088           |
| Rentals.....   | 258,992            | 268,252            | 302,130             | 309,385             | 312,035             | 341,916             |
| <b>Totals.....</b>                                       | <b>\$5,518,567</b> | <b>\$6,062,479</b> | <b>\$6,761,318</b>  | <b>\$7,322,273</b>  | <b>\$9,237,783</b>  | <b>\$11,916,451</b> |
| Available for depreciation and return on investment..... | \$3,424,043        | \$3,320,463        | \$3,553,391         | \$3,486,459         | \$2,439,233         | \$3,263,163         |
| Return on \$70,943,020*.....                             | 4.83%              | 4.68%              | 5.01%               | 4.91%               | 3.44%               | 4.60%               |

\* Value fixed by ordinance of the City of Chicago, Aug. 14, 1918.

assessment or the amount necessary to participate in the distribution of the company's assets will of course be penalized. The Marine Trust Company, the Bank of Buffalo and the Manufacturers' and Traders' National Bank of Buffalo stand ready to participate in the underwriting.

The protective committee decided upon the plan at a meeting in New York on Aug. 6. The detailed plan has been sent to all bondholders. It will go into effect unless 30 per cent of the holders of the bonds object. The debts of the protective committee, which has been looking after the interests of the bondholders for more than a year, must be paid and the additional fund made available for financing the road.

The bondholders hold about \$18,000,000 of the bonds of the International Traction Company, which owned all of the stock of the railway. After the traction company defaulted in its interest on the bonds, foreclosure proceedings were started and they acquired the stock which was security for the bonds. The bondholders have been represented by a protective committee of which Elliott C. McDougal, president of the Bank of Buffalo, is chairman. Thomas E. Mitten, president of the Philadelphia (Pa.) Rapid Transit Company, is a member of the committee.

### MITTEN MANAGEMENT TO CONTINUE

The Buffalo bankers who propose to take over the control of the railway will retain the Mitten interests to operate the traction system. Herbert G. Tulley, one of Mr. Mitten's aides, is president of the International. He will be retained under the reorganization plans.

this table are as accepted by the Illinois Public Utilities Commission in the rate case which the elevated railways have before that body at the present time, items of \$586,017 for replacement reserve, \$137,501 for valuation expenses, and \$50,000 income taxes having been set aside by the Public Service Commission.

### STATEMENT OF CHICAGO ELEVATED RAILWAYS FOR MAY

|  |             |
|--|-------------|
| Gross earnings.....  | \$1,306,685 |
| Total expenses.....  | 1,122,940   |
| Balance for interest.....  | \$183,744   |
| Fixed interest charges.....  | 206,103     |
| Net deficit for May, 1920.....   | \$22,364    |
| Payroll for May, 1920.....   | 700,264     |
| Passengers carried in May, 1920.....   | 16,056,716  |
| Since Aug. 1, 1918, wages on the elevated railroads have increased as follows: |             |
| Aug. 1, 1918, increase per year.....   | \$1,566,537 |
| Aug. 6, 1919, increase per year.....   | 2,650,739   |
| June 1, 1920 (estimated), per year.....  | 1,756,512   |
| Total increase.....  | \$5,973,788 |
| Increase in cost of materials per year....                                     | 793,918     |
| Increase in power, taxes, rentals, etc.....                                    | 357,323     |
| Total increase in expenses per year since Aug. 1, 1918.....                    | \$7,125,029 |

The accompanying statement for the month of May, 1920, shows that there continues to be a deficit under the 8-cent cash fare, with two tickets for 15 cents. This deficit for June and July will presumably be increased, owing to the large increases in wages which became effective on June 1, whereas the increase in the rate of fare to 10 cents cash and four tickets for 35 cents did not go into effect on the lines of the elevated until Aug. 4.

If the return for the five-year period is averaged it will be found to be 4.58 per cent.



## Large Decrease in Net Income

### Long Island Railroad Operating Ratio Now 85 per Cent, an Increase of 10 per Cent in One Year

The thirty-eighth annual report of the Long Island Railroad for the year ended Dec. 31, 1919, shows that the company is approaching a crisis very rapidly. Operating expenses are increasing twice as fast as the operating revenues, the percentage change for the former being 23 per cent and for the latter only 9.7 per cent. This allowed a net income transferred to profit and loss under government operation of \$2,500,000, a decrease of \$1,700,000, or approximately 40 per cent, from the income of 1918. This decrease is due to the great increase in cost of operation and because no increase in fares has been allowed.

THE accrued compensation payable by the government to the company for the possession, use and control of the property of the Long Island Railroad, together with its other corporate income, enabled the company to pay its fixed charges, taxes and expenses and carry forward more than \$682,000 to the credit of profit and loss. The latter account was charged with \$115,773 to cover the yearly charge of \$150,000 on the Atlantic Avenue leasehold estate, less other credits, so that the amount to the debit of profit and loss account was, as a result of such credits and charges, reduced to \$566,303. The net income to the company under government guarantees in comparison with 1918 decreased about \$90,000, or 11.8 per cent. This was due to the fact that the gross income increased only about two-thirds as much as deductions from the gross income.

#### \$1,700,000 DECREASE IN NET

Glancing at the income statement of the federal operation, the net income decreased by \$1,700,000, or more than 40 per cent, over 1918. This decrease may be traced to the increase in the operating ratio from 75.2 per cent in 1918 to 85.3 per cent in 1919. Operating revenues increased only 9.7 per cent, or about \$2,100,000, while operating expenses increased 23 per cent over 1918, or nearly \$4,000,000.

The extraordinary increase in passenger traffic of 16.5 per cent from 55,004,086 passengers carried in 1918 to 64,067,541 in 1919, with an increase in business through western terminals varying from 15 to 27 per cent, necessitated the acquisition of additional equipment. An arrangement was made for the purchase of 100 steel passenger cars at a cost of \$2,088,000. These cars are under construction and should be delivered by the autumn of 1920.

The trend of operating statistics of the Long Island Railroad between the years 1881 to 1919 may be obtained from the accompanying chart. Gross revenues started from the low figure of \$1,899,973 in 1881 and increased very gradually until 1916, when the increase was rapid, changing from \$14,971,839 in 1916 to \$24,381,974 in 1919. The operating expenses followed closely the curve of the revenues, starting at \$1,674,135 and ending in 1919 with \$21,689,979. From these two curves another may be drawn showing the variation in the operating ratio. The trend of this curve has been upward almost from the start. The lowest percentage

ever reached was 58.1 per cent in 1887. At present the ratio has increased to 89 per cent, and there are prospects of its increasing still higher. One reason for the increase in operating ratio during the last eleven years is due to the fact that taxes are included in the operating expenses commencing with the year 1908. Expenses shown for 1918 and 1919 include taxes of the federal administration and the war taxes paid by the corporation, heretofore charged to "Railway Tax Accruals."

#### INCOME STATEMENT OF THE FEDERAL OPERATION OF THE LONG ISLAND RAILROAD

| Year ended Dec. 31:                            | 1919         | 1918         | Percentage, Change |
|--|--------------|--------------|--------------------|
| Passenger revenue.....                         | \$15,607,723 | \$14,246,016 | 9.5                |
| Freight revenue.....                           | 6,280,427    | 5,713,725    | 9.9                |
| Revenue from other railway operations.....     | 2,493,824    | 2,281,415    | 9.3                |
| Total railway revenue.....                     | \$24,381,974 | \$22,241,156 | 9.7                |
| Maintenance of way and structures.....         | 3,163,138    | 2,894,843    | 9.3                |
| Maintenance of equipment.....                  | 4,334,035    | 3,173,826    | 36.6               |
| Traffic.....                                   | 156,876      | 134,773      | 16.4               |
| Conducting transportation—rail and water.....  | 12,167,012   | 9,867,339    | 23.2               |
| Miscellaneous operations.....                  | 175,543      | 175,884      | — 0.2              |
| General.....                                   | 591,929      | 500,528      | 18.3               |
| Transportation for investment—Credit.....      | 1,684        | 8,122        | —79.2              |
| Total railway operating expenses.....          | \$20,586,849 | \$16,739,071 | 23.0               |
| Net operating revenue.....                     | \$3,795,125  | \$5,502,085  | —31.0              |
| Taxes assignable to railway operations.....    | 1,063,277    | 1,069,859    | — 0.6              |
| Uncollectable railway revenue.....             | 5,314        | 3,314        | 60.5               |
| Expenses assignable to railway operations..... | \$1,068,591  | \$1,073,173  | — 0.4              |
| Operating income.....                          | \$2,726,534  | \$4,428,912  | —38.6              |
| Deductions from gross income:                  |              |              |                    |
| Net hire of equipment—Dr. Balance.....         | \$171,450    | \$277,962    | —38.4              |
| Net joint facility rents—Dr. Balance.....      | 133,384      | 259,859      | —48.7              |
| Net miscellaneous income—Credit.....           | 86,873       | 338,013      | —74.1              |
| Total deductions from gross income.....        | \$217,961    | \$199,808    | 9.1                |
| Net income transferred to profit and loss..... | \$2,508,573  | \$4,229,104  | —40.8              |

#### INCOME STATEMENT—LONG ISLAND RAILROAD

| Year ended Dec. 31:  | 1919        | 1918        | Percentage, Change |
|--|-------------|-------------|--------------------|
| Compensation accrued under Federal control for possession, use and control of property of company..... | \$3,221,949 | \$3,221,949 | 0.0                |
| Other corporate income.....  | 719,276     | 562,299     | 27.9               |
| Gross income.....  | \$3,941,225 | \$3,784,248 | 4.2                |
| Deductions from gross income.....  | 3,258,719   | 3,010,273   | 8.3                |
| Net income.....  | \$682,506   | \$773,975   | —11.8              |
| Disposition of net income.....   | 430         | 430         | 0.0                |
| Balance transferred to profit and loss.....  | \$682,076   | \$773,545   | —11.8              |
| Amount to debit of profit and loss, at beginning of year.....  | 6,543,179   | 6,378,661   | 2.6                |
| Sundry net debits during the year.....   | 115,773     | 938,063     | —87.6              |
| Amount to debit of profit and loss at end of year.....   | \$5,976,876 | \$6,543,179 | — 8.7              |

#### STATISTICAL INFORMATION—LONG ISLAND RAILROAD

| Year ended Dec. 31:  | 1919         | 1918         | Percentage, Change |
|--|--------------|--------------|--------------------|
| Miles of single track.....                                 | 398.38       | 398.38       | 0.0                |
| Train-miles:   |              |              |                    |
| In passenger service.....                                  | 6,062,254    | 5,909,033    | 2.6                |
| By freight service.....                                    | 433,074      | 481,077      | —10.0              |
| Total revenue train mileage.....                           | 6,495,328    | 6,390,110    | 1.7                |
| Car-miles:   |              |              |                    |
| Passenger service.....                                     | 32,414,371   | 30,415,678   | 6.6                |
| Freight and other service.....                             | 9,433,192    | 9,684,003    | — 2.6              |
| Total car-miles.....                                       | 41,847,563   | 40,099,681   | 4.4                |
| Revenue passengers carried.....                            | 64,057,341   | 55,004,086   | 16.5               |
| Passenger revenue.....                                     | \$15,623,417 | \$14,254,641 | 9.6                |
| Passenger revenue per cent of total operating revenue..... | 64.08        | 64.09        | — 0.01             |
| Passenger revenue per mile of line.....                    | \$39,217     | \$35,782     | 9.6                |
| Average revenue per passenger (cents).....                 | 24.39        | 25.92        | — 5.9              |
| Average miles each passenger was carried.....              | 15.97        | 15.99        | — 0.1              |
| Average number of passengers per car-mile.....             | 31.56        | 29.00        | 8.8                |
| Statistics per train-mile:                                 |              |              |                    |
| Passenger train revenue (cents).....                       | 278.2        | 257.7        | 8.0                |
| Passenger train expenses (cents).....                      | 263.5        | 224.0        | 17.6               |
| Net passenger train revenue (cents).....                   | 14.7         | 33.7         | —56.8              |
| Number of passengers.....                                  | 10.6         | 9.3          | 14.0               |
| Train-miles per revenue passenger.....                     | 0.094        | 0.1075       | —12.6              |
| Statistics per car-mile:                                   |              |              |                    |
| Operating revenue (cents).....                             | 58.30        | 55.60        | 4.9                |
| Operating expenses (cents).....                            | 49.20        | 41.80        | 17.7               |
| Net income (cents).....                                    | 5.98         | 10.55        | —43.3              |
| Number of passengers carried.....                          | 1.52         | 1.37         | 10.9               |
| Car-miles per revenue passenger.....                       | 0.654        | 0.728        | —10.2              |
| Statistics per mile of road:                               |              |              |                    |
| Operating revenue.....                                     | \$61,203     | \$55,829     | 9.6                |
| Operating expenses.....                                    | \$54,294     | \$44,764     | 21.3               |
| Net operating revenue.....                                 | \$6,909      | \$11,065     | —37.6              |
| Number of passengers carried.....                          | 160,820      | 138,000      | 16.5               |
| Operating ratio per cent.....                              | 85.3         | 75.2         | 10.1               |



The operating income is the difference between the gross revenue and operating expense curves. The figures for 1918 and 1919 represent the operation by the United States Railroad Administration, except those under "Rentals Paid," which represent the rental obligations of the Long Island Railroad. The amount shown under "Net Operating Income" is the difference between the result of the federal operation and the rental obligations of the corporation.

About 398 miles of road are operated

## Renewal Fund for New Cars

### Commission Orders Chicago Company to Use Idle Funds to Purchase New Rolling Stock

The Illinois Public Utilities Commission on July 31 issued a supplemental order in which it directed the Chicago Surface Lines to continue to deduct from the gross receipts 8 per cent for the current renewals and accruing depreciation, but to deposit this sum from month to month in a special equipment fund instead of the renewal and

the companies have been unable to comply with the order of the commission to purchase new equipment, by reason of financial difficulties and economic and financial conditions beyond their control, the commission sets forth the reason for its decision in the following words:

It is the judgment of the commission that the public interests can best be served by requiring the active employment in the public service of the amount allowed by it for current renewals and accruing depreciation, and that this will be accomplished by ordering the investment of the amount thus allowed (less expenditures for current renewals) in necessary additional equipment, rather than by permitting such amounts to be deposited in an idle fund which draws only 3 per cent interest. The rights and interests of all parties can be protected by providing that the cost of additional equipment purchased under this order shall not be added to the petitioners' investment, or to the so-called capital account or purchase price provided in the city ordinances, unless and until they deposit in such renewal and depreciation funds the amounts which may be expended under this order for additional equipment.

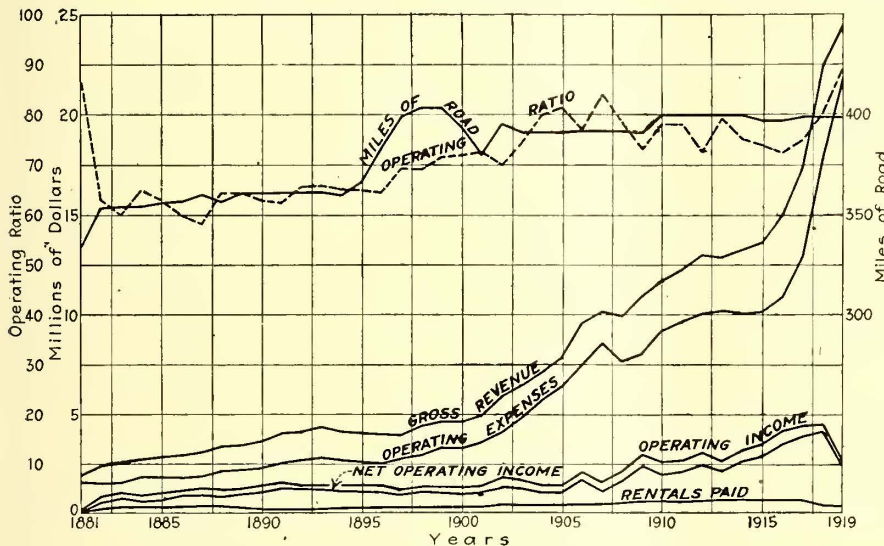
To date more than \$10,000,000 has been accumulated and is on deposit in the renewal and depreciation fund and is available for making renewals or replacements of principal parts upon certificates of the Board of Supervising Engineers. The 8 per cent allowance will amount to about \$240,000 a month, of which \$90,000 to \$120,000 will be required for current renewals, leaving more than \$120,000 a month available for new car purchases.

Under the duties imposed upon it by the Legislature the commission is required to determine the accruing depreciation, and under earlier order the sum was fixed at 8 per cent of the gross earnings, estimated on the basis of a 5-cent fare. Later the commission acknowledged that there was much force to the contention that this amount was entirely inadequate if provision is made for taking care of depreciation on the basis of labor and material costs at the time the depreciation is accruing.

### B. & L. E. Bids Advertised

Bids are being advertised for the sale of the property of the Buffalo & Lake Erie Traction Company, Buffalo, N. Y., between the Buffalo city line and the New York State line except such parts of the line as were excluded by the provisions of the recent order of the Supreme Court of Erie county, referred to in the issue of July 17, page 147. The action for the foreclosure of the company's first and refunding mortgage is brought by the New York Trust Company, New York City. The property includes all the belongings of the company.

All bids must be delivered or mailed to George Bullock, receiver for the railway, at his office in Erie, Pa., before midnight of Sept. 15. Tenders must be accompanied by cash or a certified check to the amount of 5 per cent of the bid. The acceptance or rejection of the bids is subject to the approval of the court. A complete inventory of the property is on file in the office of the receiver at 61 Broadway, New York, N. Y., and his attorney, Daniel J. Kenefick, 1330 Marine Trust Building, Buffalo.



OPERATING STATISTICS OF THE LONG ISLAND RAILROAD

Graph of revenue, expenses, operating income and rentals from 1881 to 1919, inclusive

by the Long Island at present. This represents about 880 miles of single track. About 70 per cent of this mileage is third rail. If traffic conditions are taken into account, the percentage of track which is electrified is very high, as the number of passengers carried on the unelectrified track is negligible compared with those carried on track supplied with a third rail.

The Long Island Railroad has applied to the Public Service Commission for an increase in passenger rates. Involved in the decision is the fate of another 100 passenger cars, which the company is contemplating purchasing in order to handle the growing passenger traffic. The financial ability of the company to pay for the cars, which are estimated to cost at present prices about \$30,000 each, depends upon its ability to earn the interest on the money which must be borrowed to purchase this rolling stock.

### Safety Cars as Security

The Virginia Railway & Power Company, Richmond, Va., through Cassatt & Company, Philadelphia, offers \$250,000 car trust 8 per cent gold certificates at 100 and interest under the Philadelphia plan. The Philadelphia Trust Company is trustee and the certificates are dated July 1, 1920. They are of \$1,000 denomination and are due serially \$50,000 each July 1, 1921 to 1925. The security is fifty one-man safety cars built by the J. G. Brill Company at a total cost of \$325,700.

depreciation fund as specified by the 1907 franchise, and to expend this sum, less actual expenditures for current renewals, in the purchase of additional equipment. Of the sum deposited in the equipment fund 60 per cent is to be deposited in the name of the Chicago Railways and 40 per cent in the name of the Chicago City Railway. From this special fund each of the companies is to pay its current renewals and expend the balance for the purchase of additional equipment.

The amount expended for such additional equipment is not to be made a charge against the capital investment of the companies, either in the amount upon which the commission will allow a fair rate of return or in the amount upon which computation is made under the city ordinances as the basis for fixing the compensation of the city of Chicago for the use of its streets, until the amounts thus expended have been repaid to the renewal and depreciation fund.

In an order dated Aug. 8, 1919, the commission said that the provision of the city ordinances for a reserve fund equal to 8 per cent of the gross receipts, for taking care of renewals and depreciation, was made on the basis of a 5-cent fare, and that in setting aside this money the company should not set aside more than 8 per cent of the amount of the gross receipts computed on the basis of a 5-cent fare instead of the higher rate of fare later authorized. In view of this opinion and the fact that



## Boston Elevated Receipts Cover Costs

The expectations of the board of trustees of the Boston (Mass.) Elevated Railway have been fulfilled, according to a statement made by the bureau of audit of the company, as a result of the 10-cent fare established on the system a year ago. For the year ended June 30, 1920, there was a balance on the profit side of \$17,079. This statement covers the second full year of public control. On July 10, 1919, the present 10-cent fare was inaugurated, but owing to the strike and other unfavorable conditions large deficits were sustained during the months of August and September of last year.

Commencing with the month of October, 1919, the operations of the road showed an actual profit each month over and above the cost of operation as defined by the act of the Legislature, until February, 1920, when abnormal snow expenses were encountered.

The month of February of this year showed an actual loss of \$372,263. It is conservatively estimated that the snow expense of the company for the year just closed, taking into consideration the direct charges for removing snow, resulting loss of revenue, damage to equipment, etc., was at least \$1,000,000.

The month of June, this year, showed a small loss due principally to a fur-

| Month   | Loss        | Profit      |
|---|-------------|-------------|
| 1919  |             |             |
| July .....  | \$599,199   |             |
| August .....  | 227,029     |             |
| September .....   | 102,466     |             |
| October .....   |             | \$168,097   |
| November .....  |             | 230,770     |
| December .....  |             | 343,333     |
| 1920  |             |             |
| January .....   |             | 78,928      |
| February .....  | 372,263     |             |
| March .....   |             | 91,076      |
| April .....   |             | 150,190     |
| May .....   |             | 98,584      |
| June .....  |             | 5,776       |
| Invoice and other adjustments and profit and loss daily item..... | 162,835     |             |
|   | \$1,306,734 | \$1,323,814 |
| Balance .....   |             | \$17,080    |

ther increase in wages granted by the recent arbitration and to large expenditures for track work.

## Foreclosure Sale Postponed

Holders of the first mortgage 5 per cent bonds of the Northampton (Pa.) Traction Company are again being urged to deposit their holdings. These bonds are due on Jan. 1, 1933. On Nov. 6, 1919, a bill of complaint was filed by the Northampton Trust Company, trustee for the bonds, against the company asking for the appointment of a receiver. Accordingly, Chester Snyder, Easton, Pa., was named to take charge of the property. A majority of the bonds has been deposited either with the Pennsylvania Company for Insurances on Lives and Granting Annuities or with the Northampton Trust Company. Foreclosure proceedings under the first mortgage were instituted and June 29, 1920, was set as the date for the sale of the property, but the sale was postponed.

# Financial News Notes

**New Chairman of Executive Committee.**—Harrison Williams has been elected chairman of the executive committee of the board of the North American Company, New York, N. Y.

**Receiver for Caldwell Traction Company.**—C. D. Purkiser has been appointed receiver of the Caldwell (Idaho) Traction Company. Mr. Purkiser was formerly assistant general manager of the company.

**Abandonment Authorized.**—The Corporation Commission of Oklahoma under date of July 14 has permitted the Bartlesville Interurban Railway to abandon service of part of its line and also to remove poles, wires and tracks.

**Colorado Line Abandoned.**—The Durango Railway & Realty Company, Durango, Col., has ceased operation and will be dismantled. The city of Durango refused to take over the line for municipal operation. The road is 2½ miles long.

**Sells \$10,000,000 of Gold Notes.**—It is announced that the Pacific Gas & Electric Company, Sacramento, Cal., has entirely disposed of an issue of \$10,000,000 of five-year 7 per cent convertible gold notes. More than \$7,000,000 of the issue was taken in California.

**Extra Dividend Declared.**—The board of directors of the J. G. White Engineering Corporation, New York, N. Y., has declared an extra dividend of 6 per cent in addition to the regular quarterly dividend of 1½ per cent on the common stock and the regular quarterly dividend of 1¾ per cent on the preferred stock, all payable Sept. 1 to stock of record Aug. 16.

**Summer Resort Road Suspends.**—The Point Pleasant (N. J.) Traction Company, which heretofore has operated 3.72 miles of line in summer at Point Pleasant, did not place the road in service this year. The company has failed for several years to earn its operating expenses and there were no funds available for carrying out improvements necessary to make the operation of the road safe.

**Would Issue More Bonds.**—Bond issues have been asked for in petitions filed with the Illinois Public Utilities Commission as follows: Decatur Railway & Light Company, Decatur, \$354,000; Danville Street Railway & Light Company, Danville, \$88,000; Urbana and Champaign Railway, Gas & Electric Company, Champaign, \$88,000; and Urbana Light, Heat & Power Company, Urbana, \$6,000.

**Appraisal for Des Moines Lines.**—As a preliminary to a settlement of the

fare difficulties of the Des Moines (Iowa) City Railway the City Council of Des Moines has appointed three appraisers to determine the amount spent by the company for additions since 1915. A service-at-cost agreement was recently recommended as offering the best solution of the traction problems of the city.

**United Railways Employs Power Experts.**—The receiver for the United Railways, St. Louis, Mo., has employed two experts from Byllesby & Company, Chicago, to assemble data for his guidance in remaking the contract of the railway with the Union Electric Light & Power Company for steam-generated power at its expiration on Jan. 1, 1921, and also to devise a more perfect accounting system for the department of supplies and maintenance.

**Towns May Purchase Line.**—A committee representing Exeter, Hampton and other towns served by the Exeter, Hampton & Amesbury Street Railway, Exeter, N. H., is reported to be negotiating through the State Public Service Commission with a view to the purchase of the company's property by the municipalities. The railway some time ago announced its intention to discontinue operation.

**Receiver Sells Cape Cod Line.**—The property of the Plymouth & Sandwich Street Railway has been sold at a receiver's sale to Louis Sovensky, Cambridge, for \$55,200. This sale included all the real estate and personal property of the road in Plymouth and Sagamore. The road covered 17.8 miles. The first 6 miles was constructed in 1899 and 1901 and in 1914 the Sagamore end was put in. In 1916 and 1917 9.25 miles was built. Operation of the entire road was begun on July 28, 1917. Operation ceased on April 1, 1918. There was much litigation between contractors and the road. It is thought that most of the trackage will be pulled up and sold for junk. Many people believe that a portion of the road, from Hotel Pilgrim to Fresh Pond, could be made profitable, and are ready to make an attempt to purchase this end of the line.

**Mortgage for \$15,000,000 Filed.**—The Waterloo, Cedar Falls & Northern Railway, Waterloo, Ia., has recently filed for record a general mortgage to the First Trust & Savings Bank, Chicago, and M. Traylor, Chicago, as trustee, to secure an issue of \$15,000,000 of gold bonds dated May 1, 1920. The bonds will mature on May 1, 1950, but are subject to prior redemption. The issue was created for refunding purposes. Not to exceed \$6,000,000 of the bonds may be issued from time to time and certified for refunding, redeeming or paying before maturity \$6,000,000 of first mortgage sinking fund 5 per cent gold bonds of the company, issued on Jan. 1, 1910, of which there are \$5,775,000 outstanding. Not to exceed \$8,000,000 of the bonds will be used from time to time as the board may direct to care for extensions, improvements, additions, etc.



# Traffic and Transportation

## Councilmen After Jitneys

**Guardians of Seattle Municipal Railway Insist that Unfair Competitors of Railway Shall Go.**

An absolute ban on the operation of jitney buses in Seattle, Wash., is provided in an ordinance transmitted to the City Council by Corporation Counsel Walter F. Meier at the request of the City Councilmen. The ordinance, however, if passed by the City Council, could not become effective until approved by a vote of the people, Mr. Meier states.

### REFERENDUM ASKED ON BUSES

The initiative petition presented by the jitney interests, calling upon the Council to submit to popular vote an ordinance in substitution of the present drastic regulations, is now in the hands of the Council. It contains the names of sufficient qualified voters to require an election on the subject at the next municipal election in March, 1921. According to Mr. Meier, any measures which the Council may pass before that election dealing with the elimination of the jitney must also be submitted to popular vote, as alternative propositions to the initiative ordinance, and cannot become laws upon being passed by the Council only.

The only hope of cutting off jitney competition at once now rests with the regulatory ordinance now in litigation, on which the courts are expected to pass on Aug. 20. The clause in the city charter which ties the Council's hands from enforcing a prohibitory ordinance without a vote of the people, according to Mr. Meier, is as follows:

In case the City Council shall after rejection of the initiative measure have passed a different measure dealing with the same subject it shall be submitted at the same election with the initiative measure, and the vote of the qualified electors also taken for and against the same.

The ordinance introduced by Counsel Meier, after stating that the bill is based on the power of the city, provides as follows:

It shall be unlawful to engage in or carry on the business of transporting passengers for, by, or in a jitney bus or to charge, demand, accept, or receive any fare, cash, ticket or other valuable thing in consideration of carrying or transporting any passenger by jitney bus within the limits of the city of Seattle.

### COMMITTEE DEFERS ACTION

The public utilities committee of the City Council has laid over consideration of the ordinance for a period of two weeks.

In the meantime the outcome of the present regulations to come before the court on Aug. 20 is being eagerly awaited. In attempting to have vacated the temporary injunction under which the jitneys are now operating

the city ran into an obstacle in the form of a writ of prohibition obtained by the jitney interests forbidding any judge of the Superior Court of King County from sitting to hear the city's motion to vacate the injunction until Aug. 20.

On that date the city is required to appear in the State Supreme Court at Olympia to show cause why the Superior Court should not be restrained from granting the motion to vacate the temporary injunction. It will be necessary for this writ of prohibition to be dissolved before the city can be heard on its motion to vacate the injunction.

If the city wins in Olympia on Aug. 20, and then wins out in the motion to vacate the injunction, the case will be dismissed from court and city officials would be free to enforce the existing regulations. If, however, the city loses the motion to vacate the injunction the case will be heard on its merits on Sept. 20.

Then if the jitney interests should win again a permanent injunction would be issued restraining the city from ever enforcing the regulations. If this permanent injunction is denied the jitney interests may appeal to the Supreme Court, and the temporary injunction would restrain the city from enforcing the regulations until the appeal is heard in Olympia some time next May. As the situation stands now, unless the city has the temporary injunction vacated, jitneys will be permitted to operate for at least another year.

## Rochester Commissioner Takes Office

The new order of things in Rochester, N. Y., with regard to electric railway administration went into effect on Aug. 1. The 7-cent fare fixed in the cost-of-service contract will not become effective, however, until it is approved by the Public Service Commission for the Second District. It is expected that the new rate of fare will shortly be approved and in operation not later than Aug. 15.

Charles R. Barnes, the newly appointed commissioner of railways under the service-at-cost agreement, outlined his policy and immediate plans in a statement to a representative of the *ELECTRIC RAILWAY JOURNAL*. The features of the statement are the following:

1. Orders will be issued requiring the company to put into effect new schedules to increase the service on all lines, especially during the rush hours.
2. Relief from the present heavy congestion on Rochester's principal thoroughfares by ordering a new routing of the cars as soon as the increased fare is granted.
3. Reconstruction of a large amount of track and special work in the city for proper service.

## Must Have 10 Cents

**Kansas City Railways Applies to Commission for Immediate Increase—Rate Would Be Adjustable**

The Kansas City (Mo.) Railways has filed an application with the Missouri Public Service Commission for an adjustable schedule of rates computed on the basis of the fluctuations in the price of fuel and labor, to become effective Aug. 20, the date of expiration of the present 8-cent fare. The effect of a favorable decision by the commission would be to raise the car fare immediately to a 10-cent cash fare with six tickets for 50 cents, or a ticket fare of 8½ cents.

### COST OF SERVICE MOUNTING

The present schedule of an 8-cent cash fare, two checks for 15 cents and five tickets for 35 cents, which has been in effect since Dec. 14, 1919, leaves an approximate deficit of \$1,000,000 from operation during the calendar year ending Aug. 20, 1920. The fare is now averaging 7.42 cents a passenger and the approximate cost of furnishing service is 8.6 cents a person.

Wage increases Oct. 1, 1919, and June 1, 1920, have added \$1,104,000 to the annual expenses of the company. Increased coal costs of \$1 a ton, 60 cents of this increase being due to recent railroad freight hike and 40 cents due to the rise in the price at the mine, have increased the yearly expenditures \$425,000. Based on the present price, the company's coal bill is now \$350,000 more than in August, 1919.

### EXPENSES INCREASE \$2,000,000

Summing up these increases a total expenditure of more than \$2,000,000 will be added to the company's expenses for the year. The company is asking for the 10-cent fare as one adequate to maintain the high standard of service which is being rendered, adequate wages to its employees and interest on the investment of stockholders.

The fare rate applied for is based on the present price of coal, about \$4.43 a ton, and the average wage of trainmen of 53 cents an hour, which is now in effect. In case coal went to \$4.93 and labor advanced as high as 58 cents an hour the 10-cent cash fare would still obtain, though only eleven tickets would be sold for \$1. The present rate is figured on the basis of \$3.43 as the cost for coal and 43 cents an hour for labor.

### JITNEYS PROVE BURDENSOME

The company estimates that jitneys cost the street car riders of Kansas City a penalty of 1 cent a ride, taking as a basis the fact that the jitneys are hauling 40,000 people a day and thereby taking away at least \$3,000 in revenue from the railway. The Kansas City Railway serves about 345,000 patrons and it would cost each patron about 1 cent to support the jitney service for the 40,000 people who use it.



## Safety Cars Probed

**Illinois Commission Holds Hearings to Determine Applicability of One-Man Equipment to Chicago Lines**

Several hearings for the purpose of determining the applicability of one-man safety cars to operation by the Chicago Surface Lines were recently held by the Illinois Public Utilities Commission. The hearings were ordered by the commission as a means of deciding whether any substantial improvement of street railway service in Chicago could be secured through the use of this type of equipment.

### SUITED TO MANY LINES

R. F. Kelker, Jr., city transportation supervisor, appeared before the commission and testified that he would not be prepared to commit himself on the advisability of bringing one-man cars into the Loop district until he had given the matter further serious consideration. He said, however, that there are numerous lines in Chicago where three one-man cars could be operated in place of two double-truck cars with resulting improvement both in service and in operating cost.

He said that the cost of operating the safety car in Kansas City, where he had recently made an investigation, was about \$2,000 a year less than for the double-truck type of car. His observations as to the results obtained in Kansas City were that the safety car worked very well except at heavy transfer points where many persons wish to board and leave the car at the same time. Under this condition he thought the one-man type was too slow in loading and unloading to be used with a high degree of efficiency. On lines where there was little congestion the "safeties" would work admirably.

In his testimony Mr. Kelker also referred to the loading platforms which have been installed in Kansas City at various points. He said that despite the fact that in some cases there is a space only 9 ft. wide for vehicles between the platform and the curb, the platforms expedite traffic and reduce accidents. Prospective passengers can wait for cars without danger of being run down by automobiles and vehicles can proceed at the sound of the traffic whistle without waiting for street cars to finish loading and get under way as they do at present.

### RECOMMENDS LOADING PLATFORMS

The cars are loaded much more quickly and get out of the congested districts much sooner. He said that he was thoroughly convinced that the installation of such platforms in Chicago, with a collector there to take the fares before cars are boarded, would do much to speed up downtown traffic, particularly in rush hours.

The chief engineer of the Illinois commission also submitted a report at one of the hearings, but inasmuch as this had been hurriedly prepared he drew no conclusions. However, he stated that while there might be some

outlying lines in Chicago where safety cars could be used, their application to main lines was of doubtful value. The commission has issued no order as the result of the hearing.

## More "Safeties" for Los Angeles

One-man car service began in the business district of Los Angeles, Cal., on Aug. 1. Twelve cars were placed in service as against nine of the older type which were replaced. The seating capacity of the safety cars is just the same as that of the cars formerly furnished, so that a marked improvement was afforded. A one-minute faster headway was permitted where the "safeties" are used through use of the three additional cars.

Use of the safety cars was introduced to the public by numerous newspaper articles furnished by the publicity department of the Los Angeles Railway and by small folders placed on the cars before the change was made. Cards hung in the cars announced that an important change in service was to be made and that the folders contained the details.

The "safeties" are equipped with name plates introducing the operators to car riders. The feature of name plates was adopted by the operators when they assembled for final instruction. The vote in favor was practically unanimous and so each safety car will announce: "This car is operated by William F. Smith," or whatever the carman's name may be. It is the theory of executives of the company that the average car rider who meets the same operator each day likes to be able to address him by name.

## Suburban Line Increase Approved

The Public Service Commission for the Second District of New York by order issued July 6 authorized the Syracuse & Suburban Railroad to charge for the balance of the year 3.6 cents a mile for cash fares, 3.1 cents for ticket fares, 2.4 cents for mileage book rates, with minimum fare of 7 cents for each class, and 1.8 cents for commutation rates.

The order further provides that after Jan. 1, 1921, fares shall be at the rate of 3.5 cents a mile for cash fares, 3 cents for ticket fares, 2.3 cents for mileage book rate, with a minimum fare of 7 cents for all classes, and 1.7 cents for commutation rates.

Application for the increased rates was due to a recently granted wage increase, retroactive to May 1, the company alleging that the increase could not be met from present revenues of the company. Village presidents of Manlius and Fayetteville testified at the hearing before Commissioner Frank Irvine that in their opinion the wages granted are reasonable and not higher than those prevailing generally in those villages. The new wage scale was reached in settlement of a strike, the conductors and motormen receiving from 52 to 56 cents an hour. Their original demands were much higher.

# Transportation News Notes

**Fare Rise in Wichita Falls.**—The City Commission of Wichita Falls, Tex., has passed an ordinance authorizing the Wichita Falls Traction Company to raise its fare from 5 cents to 6 cents. The company will make a 2-cent charge for each transfer.

**Fare Increase Approved.**—An increase in the rate of fare from 5 cents to 6 cents on the Sandusky, Ohio, line of the Lake Shore Electric Railway, Cleveland, has been approved by the Sandusky City Commission. Five tickets for 25 cents may be purchased under the new ordinance.

**Appeals Fare Increase.**—The City of Milwaukee has filed an appeal in the Dana County Circuit Court from the recent order of the Wisconsin Railroad Commission granting the Milwaukee Electric Railway & Light Company an increase in fares. The order of the commission became effective June 27 and fixed the fare at 7 cents, or eight tickets for 50 cents.

**Ten Cents in Elgin.**—The Illinois Public Utilities Commission on July 30 authorized the Aurora, Elgin & Chicago Railroad, Aurora, Ill., to raise its cash fare in Aurora and Elgin from 8 cents to 10 cents. The company was directed to sell six tickets for 50 cents. The increase was made necessary by the wage advances recently granted the company's employees.

**Ten Cents on Rainier Line.**—Ten-cent cash and 63-cent token fares went into effect on the lines of the Seattle & Rainier Valley Railway, Seattle, Wash., on July 20. Fifteen metal tokens are sold for \$1. A charge of 2 cents is made for transfers to and from the cars of the Seattle Municipal Street Railway, on the token fare, no charge being made for transfers on the cash fare.

**Seven Cents in Lima.**—Beginning Sept. 1 the Ohio Electric Railway, Springfield, Ohio, will be permitted to charge 7-cent fares on its lines in Lima, Ohio. It will sell nine tickets for 50 cents, with free transfers. The increase has been authorized by the Lima City Council. The company asked for an 8-cent fare. The company will be asked to resume service on the Grand Avenue line, abandoned last winter.

**Use of "Movie" in Louisville.**—The Louisville (Ky.) Railway is using a moving picture screen advertising in every moving picture house in Louisville to place before the public its position in regard to 5-cent fares and the need for an increase. Practically the same material which is appearing in its advertisements in the daily papers is being flashed on the moving-picture screens throughout the city.



**Seven Cents on Evanston Lines.**—The Evanston (Ill.) Railway was granted an increase in its rate of fare to 7 cents cash or five tickets for 30 cents by an order of the Illinois Public Utilities Commission, announced last week. The new rate supersedes the former straight 6-cent fare with no tickets, and became effective Aug. 7. The rate of fare was changed from 5 cents to 6 cents on May 1, 1920.

**City-Owned Line Reduces Fare.**—A 5-cent fare became effective Aug. 1, on the Tacoma (Wash.) Municipal Railway. An additional charge of 3 cents is made for a transfer to the lines of the Tacoma Railway & Power Company and the Pacific Traction Company. The fare has been 7 cents. Transfers from the privately owned lines will be accepted by the city under the new arrangements, the companies paying the city 2 cents on each transfer issued by them and accepted by the city on the municipal line.

**Flat Fares in Connecticut.**—Seven cents is now the basic fare on the lines of the Connecticut Company, New Haven, Conn. The order of the State Public Utilities Commission abrogating the zone system of fare collection and setting up in its place a flat rate of 7 cents, took effect on Aug. 8. Under the new regime the initial fare of 7 cents permits a passenger to travel to any point within the traffic centers of cities and two miles from the traffic centers of towns, with a cost of approximately 3 cents a mile for distances traveled thereafter. Transfers are free.

**Seven Cents in Charleston.**—Fares on the lines of the Charleston Interurban Railroad, Charleston, W. Va., were raised from 6 to 7 cents by a recent order of the State Public Service Commission. The order provides that four tickets may be bought for 25 cents, or ten tickets for 60 cents. The commission based its order upon the net earnings of the company for the four-month period ended June 30. The net earnings, according to the company's report, after operating expenses and taxes had been deducted, amounted to \$8,313. The rate was increased from 5 to 6 cents on Feb. 25 last.

**Fare Rise Opposed.**—An ordinance giving the Toledo, Bowling Green & Southern Traction Company, Findlay, Ohio, the right to put in effect a flat 10-cent fare for four months on its lines in Findlay, is meeting with serious opposition from business interests of that city. The measure, prepared by the company's attorneys, gives the railway the alternative of discontinuing city service at the end of the 10-cent fare period. The company's representatives told the City Council that the 10-cent fare would not solve its problems as decreased patronage would result with higher fare.

**Audit Justifies Fare Rise.**—A 7-cent fare is required by the Oklahoma Railway, Oklahoma City, Okla., if the company is to continue to operate, according to the report of auditors appointed by the City Commission to examine the

company's books. The railway recently applied to the municipal authorities for an increase in fare from 5 cents to 7 cents. The audit showed a valuation of \$3,400,000, and on this valuation it was shown that a 7-cent fare would barely take care of wage increases already promised by the company and provide an equitable return to the company.

**Seeks Seven Cents in Victoria.**—A. T. Goward, local manager of the British Columbia Electric Railway at Victoria, B. C., has formally notified the City Council by letter that his company will make application to the Board of Railway Commissioners for a 7-cent fare on the Victoria lines. Mr. Goward points out that when the company first applied for permission to charge a 6-cent fare it believed that such a charge would make it possible to operate the system on a satisfactory basis. Subsequent events, however, have proved that this could not be done, according to Mr. Goward, and an appeal to the Railway Board for a 7-cent fare appeared to be the only course left.

**Eight Cents in East Chicago.**—An 8-cent fare has been granted to the Chicago, Lake Shore & South Bend Railway, Michigan City, Ind., by the State Public Service Commission on its lines in East Chicago, without affecting the transfer of school children, the commission abolishing the previous zones and zone fares of the company. The Indiana Railways & Light Company, Kokomo, has been granted a straight fare of 3 cents per mile on passenger service, effective on one day's notice. The Indiana Union Traction Company of Anderson has been granted an increase on its rates on the transportation of crushed stone, sand and gravel in carloads between points on its lines to a graduated scale of 40 cents to 85 cents a ton, effective on one day's notice, until Jan. 11, 1921.

**Ask More on Interstate Lines.**—The Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo., has filed an application with the Missouri Public Service Commission asking an increase in passenger and freight rates. The company sets forth that it transports freight and passengers between points in Missouri and other states and as a common carrier is subject to the transportation act of 1920, and should operate on the same basis as the steam lines. The date of the hearing has not been set. The Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kans., has filed a similar application with the Kansas Public Utilities Commission for freight and passenger rate increases. The Interstate Commerce Commission has granted the petitioned increase on rates to the Kansas City, Kaw Valley & Western Railway and the company is publishing its tariffs. The new rates will go into effect Aug. 26.

**Seven Cents Asked in Ft. Wayne.**—Paul Haynes, representing the Indiana Service Corporation, has just concluded a hearing in Fort Wayne, Ind., on the petition of the Indiana

Service Corporation, for a 7-cent fare in that city. The company throughout pointed out that it based its petition for increased fare on the former or pre-war valuation and not the present valuation of its property. Robert L. Feustel, president of the company, said that with an increase in fare it would be able to grant its men an increase and to keep its equipment in much better condition than before. At the present time the trainmen are getting 40 to 45 cents an hour. Mr. Feustel explained that if the 7-cent fare were granted the company would issue four tokens for 25 cents. City officials and the City Council are against the proposed increase. An audit of the company's books showed that in January of this year 1,528,000 passengers were carried, while in April with the same car mileage only 1,395,000 were carried.

**Sliding Scale for Syracuse.**—Adoption of a service-at-cost plan for the Syracuse (N. Y.) lines of the New York State Railways will be recommended in the report of a citizens' committee appointed some time ago to inquire into transportation conditions in that city. A commissioner of transportation, under the plan to be recommended by the investigating committee, will be named to supervise electric railway affairs in Syracuse. The original fare probably will be 7 cents. The proposed agreement follows in many details the agreement which the city of Rochester has accepted. The study by the committee revealed the fact that the only hope the people of the city have of enjoying efficient, prompt railway service was by the adoption of some agreement that would give the local lines of the New York State Railways a financial return commensurate with the investment in Syracuse. Ford, Bacon & Davis, the engineers who were employed to investigate the whole subject of local transportation, have practically completed their survey.

**Wants Track Payments Cancelled.**—The City Council of Tacoma, Wash., has protested to the United States Shipping Board against paying any part of the claim held against the Tacoma Municipal Railway for double-tracking the line during the war period. Representatives of the Shipping Board recently came to a tentative agreement with the members of the Council that the city should pay to the board the sum of \$42,000 and turn back ten cars purchased by the Emergency Fleet Corporation in settlement of the standing indebtedness. As a war measure the Council voted to double-track the line to accommodate shipyard workers. After the voters of the city turned down the proposition of putting added money into the lines the Council had to proceed without tax money. The Government therefore helped to finance the improvements and furnished ten cars, giving the city an option on their purchase. The city has already paid the Government \$16,000 in interest on the account. The cars cost \$74,000, with \$35,000 added for new motors, making \$109,000 for the cars.



## Legal Notes

### CALIFORNIA—*A Person Crossing Behind a Passing Train Must Use Powers of Observation.*

The general rule that one who attempts to cross a railroad track must reasonably use his own powers of observation to assure himself there is no danger from approaching trains applies to a person from whom a train approaching on a second track is hidden by a train which has just passed. [Griswold vs. Pacific Electric Railway, 187 Pacific Rep., 65.]

### CALIFORNIA—*Time When Relationship of Passenger and Carrier Terminates.*

Where a street car passenger had alighted upon the street for the purpose of transferring to another car, but before she had reasonable opportunity of getting away was injured by the overhang of the car from which she had alighted when it turned on a curve, the relation of carrier and passenger had not terminated. [Boa vs. San Francisco-Oakland Terminal Railways., 187 Pacific Rep., 2.]

### FEDERAL COURTS—*Requiring Repaving with Asphalt Instead of Macadam Not Unreasonable—Low Earnings Not Excuse for Failure to Repave.*

Where a street railway franchise imposed on the railroad the obligation of repaving a specified portion of the street when the street was to be repaved, it was not an inherently arbitrary or unreasonable requirement to provide that such portion of the street be paved, like the rest of the street, with asphalt upon a concrete foundation, instead of macadam, with which the street was originally paved. While the financial condition of a public service corporation is a fact properly to be considered, when the reasonableness of an order directing an unremunerative extension of facilities or forbidding their abandonment is determined, the mere fact that a street railway is not earning 6 per cent on the value of its property does not relieve it of the obligation voluntarily assumed by its franchise to keep a specified portion of the street in repair. [Milwaukee Electric Railway & Light Company vs. State of Wisconsin, 40 Supreme Court Rep., 307.]

### ILLINOIS—*Benefits from Elevated Railroad Which May Be Considered Not Limited to Those Resulting from Operation in the Particular Block.*

In determining the damages to abutting property from an elevated railroad,

the special benefits from increased traffic and travel facilities which may be considered are not limited to those resulting from the construction and operation of the road in the particular block in which the property is situated, and evidence of the passenger traffic at stations a few blocks from the property is admissible. [Geohegan, et al., vs. Union Elevated Railway, et al., 126 Northeastern Rep., 763.]

### INDIANA—*Negligence of Parent Cannot Be Imputed to Infant Five Years of Age.*

The negligence of a mother who was struck at a railroad crossing by a car cannot be imputed to her infant daughter, only five years old, who accompanied her and was also injured. [Terre Haute I. & E. Traction Company vs. Stevenson, 126 Northeastern Rep., 34.]

### MARYLAND—*Ordinary Care Required for Safety of Boy Permitted to Ride on Outside of Car.*

A conductor, who permitted a boy to jump on the outer side of the back platform of his car for the purpose of riding across a bridge, by holding on to the outside of the safety gate, was required to exercise ordinary care for the safety of the boy after he became aware of his dangerous situation, and when the car failed to stop on the other side of the bridge and started to increase its speed, the conductor should have stopped the car to let the boy off or have opened the safety gate and admitted him to the rear platform. [Carr, et al., vs. United Railways & Electric Co. of Baltimore, 108 Atlantic Rep., 872.]

### NEW JERSEY—*Pedestrian, Who Cannot Cross Ahead of Car in Safety, Is Negligent Unless He Waits.*

The rule enunciated in the opinion for affirmance in Earle vs. Consolidated Traction Company, 64 N. J. Law, 573, 46 Atl. 613, viz., "The first to reach the crossing has the right to pass over first, but if it appears that the motor-man does not intend to respect his right of priority and that the driver [or pedestrian] cannot, in the exercise of reasonable prudence, exercise his right, he is guilty of contributory negligence if he fails to wait or turn aside, if he can do so by the use of due care, and thus protect himself from injury," followed and approved. [Connolly vs. Public Service Railway, N. J., 109 Atlantic Rep., 507.]

### NEW YORK—*Lighting Fire on Cold Day Deemed Incident to Employment—Section Hand Working in Gravel Pit Not Engaged in "Interstate Commerce."*

Where a laborer, shoveling gravel into wagons on a cold day, suffered injury to his eye from a flying spark while building a bonfire to warm himself and his fellow workers during the intervals between the loading of wagons, his act was fairly incidental to the work, so

as to justify an award under the Workmen's Compensation Law for the injury. Where a section hand on a railroad primarily designed for intrastate carriage of passengers, and incidentally in interstate commerce, was hurt in a gravel pit, away from the railroad's premises, while loading gravel into wagons driven to a siding and dumped into a work train for carriage to points on the right-of-way requiring ballast, he was not engaged in "interstate commerce," within the federal law, and he was therefore within the protection of the state Workmen's Compensation Law. [Malandrino vs. Southern New York Power & Railway Corporation, 180 New York Supp., 735.]

### NEW YORK—*Pedestrian Held Negligent in Failing to Heed Approaching Car Observed.*

A pedestrian, who, when she started to cross street railway tracks, observed an approaching car at a distance and in a position where there was manifest danger of colliding with it but paid no further attention to it, was chargeable with contributory negligence as a matter of law. [Salmirs vs. Union Railway of New York City, 181 New York Supp., 283.]

### TENNESSEE—*Bond by Traction Company for Construction of Line Held Penal, Though Given to Municipality.*

Where a traction company, under a franchise to construct lines on particular streets, executed a bond for \$200,000 to secure the municipality against loss, and also to procure the company's compliance with the regulation requiring stipulated expenditures within a fixed time, the bond must be treated as penal, notwithstanding the rule that the bond given to secure performance of public work for the benefit of a municipality will be treated as liquidated damages, because of the difficulty of ascertaining the damage. However, the city cannot recover damages from the company without proof of special injury. [City of Nashville vs. Nashville Traction Company, et al., 220 Southwestern Rep., 1087.]

### WEST VIRGINIA—*Municipal Franchise Construed to Entitle City to Base Its Percentage on Gross Receipts Without Abatement for Lines Beyond Its Limits.*

A provision in a railway franchise provided for the payment of a certain percentage of the gross revenues from all of its lines operated wholly within the corporate limits and certain other specified lines which are partly within and partly without the corporate limits. Held, that this clause entitles the city to receive the percentage provided in the contract upon the entire gross receipts from such lines without any abatement therefrom because of that part of the specified lines which may lie without the corporate limits. [City of Parkersburg vs. Kanawha Traction & Electric Company, 102 Southeastern Rep., 116.]



## Personal Mention

**P. R. Taylor**, office engineer of the power plant of the Kansas City (Mo.) Railways, has resigned to accept the position of city manager of Grand Haven, Mich.

**E. E. Brownell** has been engaged by the City Council of Akron, Ohio, to represent the city in the negotiations with the Northern Ohio Traction & Light Company looking to a settlement of the traction issues in Akron.

**George I. Plummer**, assistant general manager of the Dallas (Tex.) Railway, has returned to Dallas after an extended trip through the North, Middle West and South, where he studied transportation conditions in the principal cities.

**Lewis Nixon**, Public Service Commissioner for the First District of New York, sailed for Europe on the *Aquitania* on Aug. 1. While abroad Mr. Nixon will study at first hand the operation of bus lines in London and other parts of England.

**C. J. Sullivan**, of Fairport, N. Y., has been appointed by Charles R. Barnes, commissioner of railways of Rochester, N. Y., accountant and auditor of the New York State Railways, Rochester lines. Mr. Sullivan has served for a number of years in different departments of public utility companies in various sections, acting in all capacities from master mechanic to general manager. For the past three years he has been the expert accountant for the capitalization department of the Public Service Commission for the Second District. While in that position he was assistant to Mr. Barnes in the investigation of the New York State Railways' finances.

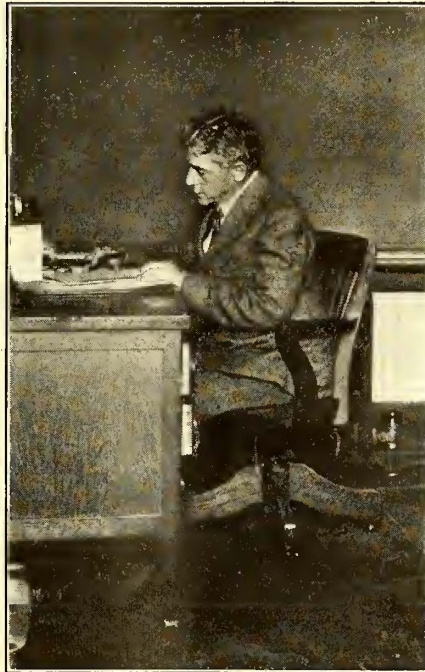
**Major Phillip Dawson** has received the honor of knighthood at the hand of King George. Sir Phillip is a partner of the firm of Kincaid, Waller, Manville & Dawson, consulting engineers, London. He is also consulting electrical engineer of the London, Brighton & South Coast Railway. In the early days Dawson's "Electric Traction" was the standard book on electric railway engineering, and later his handbook was recognized as the authority on that subject. During the war Sir Phillip rendered valuable service as a member of the Disposal Board, Ministry of Munitions. He was also named a member of the commission appointed by the Belgian Government to investigate the future of the Belgian State Railways. He is now prominently associated with the scheme for the electrification of these railways. Sir Philip is a member of the Institute of Civil Engineers, the Royal Institute of Mechanical Engineers and the Institute of Electrical Engineers.

### Railway Gets Editor

**Mr. Clark Leaves Association Work to Join Public Service Railway— Authority on Fares**

Harlow C. Clark has resigned his official connection with the American Electric Railway Association to accept a position with the Public Service Railway, Newark, N. J. Mr. Clark will enter at once on his new duties with the publicity department of the company. For this work he is admirably fitted by reason of his keen understanding of the problems of the industry, gained during his long service as editor of *Aera*, the Association's monthly magazine.

Mr. Clark is a native of Syracuse,



H. C. CLARK

New York. He was educated in the public schools and high school of that city and in Blackhall School, in Connecticut. His first work was in the steam railroad field, serving in the freight and transportation departments of the New York Central and the Lehigh Valley Railroads. In 1892 he returned to Syracuse and entered the employ of the *Syracuse News* as a reporter, subsequently serving as Sunday editor and city editor on the *Syracuse Herald and Journal*.

In 1903 Mr. Clark was drafted from newspaper work to become secretary to the Mayor of Syracuse. Two years later he became secretary of the Syracuse Chamber of Commerce and in 1907 was appointed Commissioner of Public Safety under Mayor Forbes. At the expiration of his term of office he re-

turned to the Chamber of Commerce as secretary. In 1911 he joined the staff of the *Syracuse Journal* as one of its editors. In the following year he was with the firm of Allen & Peck, Inc., his work being in the public relations field. Mr. Clark was appointed editor of *Aera* in 1913.

Mr. Clark has written extensively upon public utility matters, being the author of "Service at Cost Plans," a book recently published dealing with modern electric railway franchises. He was one of the witnesses before the Federal Electric Railways Commission and the Public Utilities Committee of the Chamber of Commerce, investigating electric railway affairs and has achieved a reputation as an authority on the subject of electric railway fares and the relations of electric railways to the public.

## Obituary

**Albert O. Brown**, traffic director of the Peoria (Ill.) Railway, died on Aug. 1 at his home in that city from heart disease. He was fifty-four years of age.

**Luther E. Guy**, claim agent of the Southern Public Utilities Company, Charlotte, N. C., and the Piedmont & Northern Railway, Greenville, died recently.

**Charles McGinley**, formerly superintendent and roadmaster of the Kansas City (Mo.) Railways, died recently. Mr. McGinley was born in Canada in 1838. He entered the employ of the Kansas City lines in 1880.

**Russell A. Griffin**, general sales manager of the National Pole Company, died on July 14 from pneumonia. Mr. Griffin was formerly connected with the American Telephone & Telegraph Company and later with the Western Electric Company.

**Daniel L. Prendergast**, head of the real estate department of the Boston (Mass.) Elevated Railway, died on July 28 at his summer home in Nantasket, Mass. Mr. Prendergast had been ill about two months. He was born in Boston in 1857.

**Melvin O. Adams**, president of the Shirley Street Railway, Winthrop, Mass., a subsidiary of the Boston, Revere Beach & Lynn Railroad, died in Boston, Mass., on Aug. 9. Mr. Adams was also president of the Boston, Revere Beach & Lynn, a steam road. He was seventy years old.

**Stiles P. Jones**, active in electric railway franchise considerations in Minneapolis, is dead. He had been executive secretary of the Minneapolis general franchise committee, secretary of the Voters' League, examiner for the War Labor Board in Washington and member of the National Public Utility League and of the National Municipal League.



# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

## Embargoes Hindering Deliveries to Electric Railways

Need of I. C. C. Removing Restrictions—Purchasing Agents Working Hard to Overcome Delays

A crying necessity of the hour from the purchasing agent's standpoint is the removal of embargo restrictions upon the shipment by rail of many kinds of supplies destined for traction service. Recently the purchasing agent of one of the largest electric railway systems in the country informed a representative of the *ELECTRIC RAILWAY JOURNAL* that the public interest is closely concerned with the inability of traction companies to obtain shipments from manufacturers on as free a basis as is available to the steam railroads. It was strongly urged that the Interstate Commerce Commission be appealed to on behalf of removing embargo restrictions which if continued can have but one outcome in many cases—the stoppage of construction and repair work and the ultimate withdrawal of service on many railway lines.

### DELAYED SHIPMENTS SERIOUSLY AFFECT NEW CONSTRUCTION WORK

One company, for example, has been unable to obtain a shipment of twenty-five carloads of ties from Jacksonville, Fla., since the early part of the year, and another tie shipment aggregating 100,000 cannot be moved out of a locality in West Virginia under present embargo restrictions. If the Interstate Commerce Commission would authorize the same freedom of movement on such material destined to electric railways that it approves in the case of the steam roads the situation would be greatly improved. Both are public utilities, this purchasing agent affirmed, and unless the above shipments of ties are made in part soon, he pointed out, it will be necessary to lay off 1,000 men engaged in pushing important track construction for the benefit of improved public service. In the case of steel rails and heavy supplies for car service the situation is likewise urgent. Machine tools, when needed, and smaller supplies available by express shipments can be obtained fairly satisfactorily, if an operating company is prepared to pay the cost of the higher-speed transportation.

It would be difficult to estimate the excess cost of operating companies this year, resulting from express shipments made necessary by the congestion of freight service. One of the leading purchasing agents stated recently that

whereas many industrial companies can afford to maintain tracers in the field to expedite deliveries the traction companies as a rule cannot spare the funds required to follow up material in person. Such difficulties react upon the service rendered the public sooner or later, but the car passenger has little or no conception of the efforts which are being made at present to

overcome the freight congestion as it affects local traction systems. It is maintained that electric railways as public utilities ought not be forced to spend time and money seeking special permits on individual freight shipments of embargoed commodities, but that a blanket order should be issued which will once and for all result in the freer flow of supplies.

## Utilities Get Extension of Coal Priority

### Confliction Regarding the Right to Both Purchase Coal in the Open Market and Secure Assigned Cars

Extension of orders Nos. 7 and 9 for ninety days from June 21 was made on Wednesday by the Interstate Commerce Commission, thereby assuring electric railways and other utilities priority of coal car assignments for coal for current use until Sept. 19. Order No. 9, which granted priority to utilities, was entered on July 13 and was to last until Aug. 19.

Under that order utilities could secure coal cars for coal for current use but not for storage. Certain interpretations of the order, however, were necessary. The rule did not make it plain whether or not utilities could store coal by purchasing in the open market and at the same time secure assigned cars for current use. The Interstate Commerce Commission assured different state utility commissions that the utilities could secure all of the coal they wished in the open market. This naturally implied that utilities which did so buy in the open market in order to assure the public of continuous service would not be penalized by being refused assigned cars.

### NO CAR ASSIGNMENTS TO UTILITIES WITH SURPLUS SUPPLIES

It has developed, however, in a dozen or more cases that the railroads have refused to assign cars to utilities with a surplus supply on hand. The stand taken by the railroads in each case was upheld by the Interstate Commerce Commission. These conflicting points of view of the I. C. C. have been brought to the commission's attention and a clarifying interpretation is expected.

The commission, it is known, has been urged from a number of separate sources to broaden its order pertaining to utility car assignments so as to permit the utilities to begin to secure coal for winter storage. It was known, however, that the commission was not in favor of such action and consequently it was not surprising to find no

mention thereof in the continuing order of last Wednesday.

It has also been learned that, in some cases mines have been able to secure enough coal cars for their output so as to be able to refuse to load cars assigned to utilities.

Generally speaking, however, utilities are everywhere taking advantage of the priority order and as a result securing more coal on contract. As a result coal is costing the utilities less. There are also indications that spot coal may cost less.

Attorney-General Palmer has been investigating the prices charged for spot coal and the reports to the Federal Trade Commission showing what it costs to mine coal. Within a few days from this writing he is expected to name a fair profit for spot coal. Coal companies making a greater profit will be subject to prosecution for profiteering under the Lever act.

## Fare Rate Increases Catch Railways Asleep

### Traction Companies Do Not Always Anticipate Changes in Fare Box Mechanisms

Manufacturers of registering fare boxes have been embarrassed at times by their inability to meet the demand of companies who have been granted an increase in fare. These demands made upon the manufacturer are at times unreasonable and prove to be a source of complaint which it seems is hardly justified.

It has frequently happened that railways have not anticipated a change in fare, which necessitates the use of multiple coins and thereby an additional coin plate in the fare-box mechanism, by making adequate preparation. When the fare increase is granted, to become effective in the near future, the company often comes back to the fare-box manufacturer with the proposition of



completely changing the fare-box coin-counting mechanism in an impossibly short period. The suddenness of such demands has made it physically impossible in many instances for the manufacturer to meet these requirements. It is believed that a little forehandedness in this respect will save traction companies from the possibility of not being able to install the new rate of fare as soon as it is authorized, and it certainly will make the problem of taking care of such customers a much more simple and businesslike one for the manufacturers. It is hardly fair to expect that a manufacturing plant shall be turned upside down and all regular work put aside and greatly delayed by the necessity of meeting the requirements in a fare-increase situation all in a minute.

#### ADVANTAGE OF METAL TOKENS FOR MULTIPLE COIN FARES

Incidentally, this frequent changing of the fare rate would seem to emphasize the advantage of using metal tokens for multiple coin fares, for in that case a change in the rate of fare will usually not involve the necessity of altering the fare box. The change necessary when metal tokens are used is a very simple one, and a new supply of the tickets can be secured upon rather short notice. This is an advantage which is appreciated only at the time of a change in fare rates, but the continuing advantages of the metal token are well known.

### Unusual Demand for Controller Parts

#### Production Has Not Caught Up with Heavy Orders for Repair Parts Damaged Last Winter

\* Sales of controller fingers and segments have gone forward this year faster than ever before, according to several of the large manufacturers of this material, until at present the demand is far above normal and proceeding regularly. This is in spite of the fact that sales are usually spasmodic and extremely light during the summer months. One of the large producers stated that his sales for the first six months of 1920 had been greater than for the whole previous year. The basis of this extraordinary condition may be traced back to last winter, when traction companies were harder hit by storms than for many years. As a result excessive demands were made upon manufacturers to replace broken-down equipment, one of the large items being controller parts. Production has not yet fully recovered from the incubus of that overload, consequently orders in some cases are still far ahead of available output.

Reports on factory stocks reveal very uneven conditions as some manufacturers are reduced to bare shelves while others have acquired fairly good stocks. Delivery quotations also vary widely, the extreme length of time running to eight weeks; but several pro-

ducers quote from two to four weeks, with one even shipping principally from stock. Deliveries on small sized orders can be made more quickly than those in larger quantities. Difficulties in obtaining metal are experienced in many cases, not that there is any actual shortage of raw material, with copper in its present condition, but merely that transportation troubles have been seriously holding up needed supplies.

Several companies report a volume of production that is not only normal but increasing and which bids fair to catch up soon with the number of unfilled orders. Many of the buyers are old customers and practically no orders have been canceled. Spasmodic labor troubles are felt in this field, but the general situation is good, especially since the close of the strike of brass workers in New England, which is expected to make further supplies of unfinished material available for the production of goods.

Prices have remained steady, and manufacturers hope to maintain the present price level, although in some quarters further increases are looked for. The majority, however, seem to anticipate no fluctuation. Collections are said to average about two months.

### Strong Market Ruling for High-Tension Insulators

#### No Stocks of Finished Products Reported, While Shipments Run from Six to Ten Months

Although the production of high-tension insulators is said to be up to normal capacity, or nearly so, demand has increased to such an extent that it now far outstrips available supply. Not only is a good volume of domestic orders reported but the call coming from foreign countries since the war has been steadily increasing and export orders are now an important factor in the business. South American countries, France, Italy and the Scandinavian peninsula offer especially favorable markets for porcelain insulators, and replacements seem to be about an equal factor with new construction work in accounting for the demand.

#### FINISHED GOODS ARE NOT AVAILABLE

Manufacturers when questioned regarding stocks of finished goods throw up their hands in despair at the very suggestion of the existence of such a thing. Reports on the raw-material situation, however, are not so uniformly bad, for although this item is undoubtedly causing delay the use of personal tracers to locate shipments and careful attention to ordering supplies long ahead have guarded against an acute shortage. Little labor trouble has been experienced in this field, although in one or two quarters some shortage of skilled workmen is reported.

With the output of insulators unable to keep pace with demand delivery dates have been growing longer. Six months is about the very best figure quoted,

and shipping dates run all the way up to ten months, depending upon the size and type. Medium-voltage sizes around 35,000 to 45,000 volts seem to be in the best shape as regards deliveries, while the highest voltage types are the worst off in that respect. Suspension insulators in several cases are reported a little easier than the pin type, and although in the former case the metal parts are a factor in production the metal is not holding up the program so much as porcelain. In spite of long deliveries an almost entire absence of cancellations is noted.

Prices at present are high, and opinions differ as to whether further increases may be expected. No price change is reported since the advances made a month and a half or more ago. Manufacturers in this line as a whole report their bills are being met fairly promptly and that little trouble is experienced with collections.

Foreign competition seems still to be a negligible quantity in affecting the American market for high-voltage insulators, as the industry abroad has not as yet sufficiently recovered from its period of war apathy.

### Poor Impression Created by U. S. Made Street Cars

An unfortunate condition in respect to American trade propaganda exists on the street car lines of Buenos Aires. It happens that the oldest and most dilapidated trolley cars are of American make, of a type twenty years old. By comparison with the later models of British-built cars, thousands of the daily users of these cars, who have not seen more recent American designs, are led to believe that European mechanical equipment is superior to North American. The two street railway companies operating in Buenos Aires are the Compañía de Tranvías Anglo-Argentino, Ltd., and the Compañía La Creze.

### Rolling Stock

The Kansas City Railways, Kansas City, Mo., advises that it purchased seventy safety cars the early part of this year.

Northern Ohio Traction & Light Company, Akron, Ohio, has just been granted authority by the Public Utilities Commission to purchase the twenty new interurban cars, fifty-six city cars and ten city trailers mentioned in the April 24 issue. Total cost of the cars will be \$1,358,000. Officials of the company state that the price of cars on this one order has advanced \$100,000 in four months.

Cheyenne (Wyo.) Electric Railway recently lost its carhouse, tools, repair parts and several cars in a fire which caused damage to the extent of \$50,000. Included in the destroyed equipment were four new inclosed trailers without motors valued at \$3,000 each, two motor



cars valued at \$10,000 each, one car of an older type, and one hand-brake car.

### Recent Incorporations

**Richmond & Fairfield Railway, Richmond, Va.**—The Richmond & Fairfield Railway has been incorporated. This is a successor company to the Richmond & Seven Pines Railway, which has recently been sold. The officers are Oliver J. Sands, president; Arthur E. Parrish, vice-president and treasurer; J. A. Baird, general manager.

### Track and Roadway

**Sacramento Northern Railroad, Sacramento, Cal.**—With the approval of the City Commission the Sacramento Northern Railroad will remove its tracks on Nineteenth Street from I to K and will vacate its franchise on that track.

**Northwestern Pacific Railroad, San Francisco, Cal.**—The Northwestern Pacific Railroad has applied to the Railroad Commission for permission to construct an undergrade crossing across the highway near Tyrone, Sonoma County. The new crossing is to take the place of a grade crossing to be abandoned.

**Washington, Baltimore & Annapolis Electric Railroad, Baltimore, Md.**—The land recently acquired by the Washington, Baltimore & Annapolis Electric Railroad for its new terminal building will be cleared of buildings and tracks will be laid.

**Kansas City (Mo.) Railways.**—The Kansas City Railways are completing the rebuilding of 2.045 miles of track in the downtown district, representing an expenditure of \$101,256.

**Northern Texas Traction Company, Fort Worth, Tex.**—The Northern Texas Traction Company has begun work on the machine shop to be erected at 1600-1610 East Front Street, Fort Worth. The building is of reinforced concrete. It will cost about \$60,000.

**El Paso (Tex.) Electric Railway.**—As soon as the money is available the Fort Bliss line of the El Paso Electric Railway will be double-tracked. This contemplated improvement will cost about \$200,000.

**Knoxville Railway & Light Company, Knoxville, Tenn.**—Extensive new track construction is being planned by the Knoxville Railway & Light Company. This plan includes new lines on Wall Avenue from Gay Street to Asylum Avenue and double-track lines on Asylum Avenue from Walnut to South Broadway.

**Ohio Valley Electric Railway, Huntington, W. Va.**—The Ohio Valley Electric Railway expects this summer to lay a double-track in Ashland, Ky., from Twenty-second Street to Twenty-ninth Street; also a new track in Hunt-

ington, W. Va., from Twenty-fourth Street to Guyandotte.

**Ohio Valley Electric Company, Huntington, W. Va.**—Following the announcement that the Ohio Valley Electric Railway will abandon its local freight station because its funds are insufficient to defray the expenses of rebuilding it T. F. Bailey, general manager of the Banks Supply Company, announced local jobbers were willing to purchase a sufficient quantity of bonds of the company to enable it to rebuild the station. The freight shed was damaged by fire recently and the fire marshal ordered it razed.

### Power Houses, Shops and Buildings

**Los Angeles (Cal.) Railway.**—An attractive and serviceable waiting station especially suitable for a terminal point has been established by the Los Angeles Railway at Manchester and Vermont Avenue with shuttle car continuation.

**Interborough Rapid Transit Company, New York, N. Y.**—Bids for the completion of the passenger station, electric lighting and heating systems for the Livonia Avenue (Brooklyn) line of the Interborough Rapid Transit Company will be received at the company's office, 165 Broadway, New York City, until Aug. 23, at which time the proposals will be publicly opened and read.

**Central Texas Electric Railway, Waco, Tex.**—The Central Texas Electric Railway, which is building an interurban line from Waco to Temple, has purchased a grading machine with which the grading on the line between Waco and Robinson, a station 6 miles out of Waco, is being done.

**Monongahela Valley Traction Company, Mannington, W. Va.**—The new terminal building of the Monongahela Valley Traction Company at Mannington, W. Va., was opened on Aug. 1. It is a one-story building, modern in every respect, and has been built to care for the increased business in the oil town.

**Cheyenne (Wyo.) Electric Railway.**—A fire believed to have been of incendiary origin has destroyed the carhouses, cars, tools and repair parts of the Cheyenne Electric Railway. The damage amounts to about \$50,000 and the matter of repairs has not yet been decided by the company.

### Trade Notes

**The Brown Instrument Company, Wayne and Windrim Street, Philadelphia,** is making arrangements for an extension to its plant, to cost about \$20,000.

**The Republic Flow Meters Company, Chicago,** announces removal from 565 Washington Boulevard to its new factory at 2240 Diversey Boulevard.

**The Locke Insulator Manufacturing**

**Company, Victor, N. Y.,** has been granted permits to erect two factory buildings, one 66 ft. x 59 ft. and the other 62 ft. x 141 ft., at Charles and Cromwell Streets, Baltimore, Md., to cost about \$44,000.

**Westinghouse Changes.**—The Westinghouse Electric & Manufacturing Company announces that L. D. Canfield, assistant district service manager at the New York office, has been appointed district service manager to L. G. Richards, who has been transferred to East Pittsburgh. G. O. Noble has been appointed special representative.

**The Metal & Thermit Corporation, New York, N. Y.,** has made arrangements to insure all employees who have served the company for at least six months. The amount of protection is graded according to the length of service. The company bears the entire expense of the insurance, which is in addition to any compensation which might be granted employees under the present State compensation laws.

**A. H. Grayburn,** for the past four years assistant to the vice-president of the Norma Company of America, Long Island City, N. Y., has been made assistant secretary and assistant treasurer of the company. Norman Bell has been appointed sales manager of the company. This appointment follows a connection over three years with the company as sales engineer.

**Titan Steel Corporation, Newark N. J.,** recently organized under the laws of Maryland, has acquired the plant of the Hewitt Steel Corporation, also of Newark. The company proposes to utilize the plant, which was used during the war for the manufacture of shells, in building railroad equipment and also for making its specialties, which are railway car trucks and body bolsters. The company has secured the manufacturing rights in the Hewitt car trucks and journal boxes. Sufficient orders are reported on hand to insure capacity operation for some time to come.

### New Advertising Literature

**Air Separator.**—The Griscom-Russell Company, 90 West Street, New York City, has issued bulletin No. 1111, covering its Stratton air separator.

**Time-Saving Accessories.**—In the latest issue of the "Esterline Graphic," published by the Esterline Company, Indianapolis, Ind., the subject of time-saving accessories for use with graphic meters is taken up.

**Electrically Driven Tools.**—The James Clark, Jr., Electric Company, Louisville, Ky., has issued catalog No. 28, covering the "Willey" electrically driven tools, generators and motors.

**The Yale & Towne Manufacturing Company, Stamford, Conn.,** has issued Volume 5, No. 3 of its bulletin "Hoisting Hints," an issue specially devoted to machine shop work.