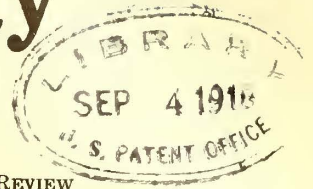


# Electric Railway Journal

Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW



Volume 52

New York, Saturday, August 31, 1918

Number 9

## "One-Man Cars Apparently Save Only in Power and Platform Expense"

**I**N SENSE this is an actual quotation from a report of a traffic man who was asked to discuss the feasibility of light-weight one-man cars for his property. Please note the word "only." On this particular road power is 15 per cent and transportation 50 per cent, or "only" 65 per cent of the total operating expense! Another 15 per cent includes track and other items which would surely decrease with light cars, but the speaker did not think a car which affected 80 per cent of his costs important enough to change his hidebound practices of a generation. Yet in his own town of 50,000 the private automobile is so rampant that even two seats per passenger with the present big cars have failed to keep it down. In other words, the street railway offers ample service but in the wrong-size packages. The same number of seats in smaller cars would soon put rust on the hinge of many a garage.

Still, what can we expect from men who use the word "only" about the two controlling accounts and whose excuse is the old rubbish of "The people of this city would never stand for cars run by one man." This is mental inertia with a vengeance!

## It's Time Now to Think of Next Winter's Snow

**T**HE memory of last winter's unusual experience in fighting, but not always overcoming, in their contests with snowstorms is still fresh in the minds of railway managers in several parts of the country. It will therefore be somewhat easier than usual to stir up interest in preparation for the coming fray. Several articles in this issue of the ELECTRIC RAILWAY JOURNAL will be useful in this connection.

The secrets of successful snow fighting, if such obvious facts can be called secrets, are these: Provide adequate equipment; organize for the conflict; instill the combative spirit in the organization; get ahead of the storm. All of this requires preparation for weeks or months in advance, and there are indications that this fact is increasingly appreciated. One evidence that the public has of the real desire of the railways to give good service is furnished by the sight of electric cars plowing through the storms when other vehicles, including jitneys, are safe and snug in their garages or barns. This is possible only when thorough preparation has been made.

Complaint has reached the office of this paper to the effect that the literature of snow fighting is in-

adequate; that railways desiring adequately to fortify themselves could not learn readily what other roads have done in this line. A study of the recent files of the JOURNAL will, however, yield a surprising fund of information regarding special apparatus, adaptation of existing equipment for this duty, mapping out of routine and emergency procedure in snow time, and education of employees in the principles and practice of the art of snow fighting. Each season adds to this reference material. It is worthy of careful study and application between now and winter.

## Electric Railway Industry Must Pull Itself Together

**F**OR patriotic reasons the executive committee of the American Electric Railway Association voted last week to rescind its decision to hold an annual convention this year at Atlantic City, and the convention will consequently be omitted. The original date for the meeting, Oct. 8-10, was decided upon last April, at a time, of course, long before the announcement of the date set for the fourth Liberty Loan drive. When Secretary McAdoo announced that this drive would begin on Sept. 28 and would continue for three weeks, which included the date set for the Atlantic City convention, a reconsideration of the date of the convention seemed desirable for the reason that many railway operators and manufacturers who would otherwise like to attend the convention would be active at home in local loan campaigns. This led up to the question of the wisdom of holding the convention at all.

There is much to be said on both sides, but the matter is now definitely settled and further discussion is idle. The main thing is to prepare to make the most of the conference meeting that will replace the convention. The latter in any case could not have been very largely attended. In all probability the attendance at the conference will be made up largely of the same men who would have gone to the convention. The change will make no difference, however, in the date of publication of our special number which was scheduled for Sept. 28, as the topic selected for that issue is "War Service and Efficiency." This subject is particularly appropriate at this time even without a convention and independent of the date which may be set for the conference that will take the place of the convention.

Some kind of a meeting or meetings of the industry appear to us to be essential at this time, and for this reason: A part of the present crisis in the railway



business is due to the lack of what may be termed an "industry consciousness." This was closely pointed out by speakers at last week's conference in New York. Such consciousness and the unity which goes with it must be developed and developed speedily. This cannot be done by correspondence. It needs the contact of mind on mind in discussion and debate. Circumstances are hastening the evolution of this consciousness, but it must be evolved from within. The recent New York meeting was helpful in this direction; the even more representative meeting to come will be still more so.

---

### Federal Government Increasingly Powerful in Electric Railway Affairs

THE advent of the national government in the electric railway field, through the War Labor Board in its mediation in labor controversies, the Emergency Fleet Corporation in its financing of extensions, the War Finance Corporation in its assisting in financing operations, etc., brings into being a new set of conditions for the railways to face. They can no longer consider themselves as detached local units, but realize now as never before that they must stand together if they are to do their full duty and at the same time preserve the integrity of the vast capital intrusted to them.

The industry is at present represented nationally by the Electric Railway War Board of the American Association. It is through this board that many of the relations with the government can best be fostered. It was at the instance of this board that a remarkably representative gathering of executives was held last week in New York to consider a report as to what the board is doing at Washington. A brief outline of the conference was printed in last week's issue. Obviously this conference was largely of an important character in which the executives talked very frankly about their own particular problems, but certain elements of the discussion demand widespread attention. Let us consider two or three of these.

First, in its conference with government officials the War Board needs facts. Electric railway data for the country as a whole are very scarce; the War Board has to collect them for itself. Hence the urgency of prompt compliance with requests for figures. The board can do practically nothing without them. Second, but closely allied with the first, the industry must develop in solidarity as suggested earlier in this article. Third, the present crisis, to the acuteness of which the findings of the War Labor Board have so largely contributed, seems certainly to demand federal influence in the adjustment of rates.

The way out of the present difficulty must and will be found. In the meantime it is up to the railways, individually and collectively, to do the best they can with the local authorities, while to the limit backing the War Board in its efforts to visualize the situation to the powers that be. Under the present emergency conditions the only hope of general relief is in the federal government. Hence the urgency of such adequate support of the War Board that it will be seen to be truly representative of the industry.

### Farmers Object to Road Damage from Motor Trucks

IF ONE may judge from the tone of an editorial in a recent issue of the *Ohio Farmer*, the agricultural interests are not viewing the matter of motor truck haulage with a very friendly eye. This well-known farm journal makes the statement that "the agitation for rural and inter-city truck service is largely discounted by the damage that is being done to improved highways by heavy trucks." As illustrative of the causes of highway failure it quotes the county commissioners of Cuyahoga County (Cleveland, Ohio) as saying that trucks weighing 20 tons or more are often run at rates of 25 m.p.h. over the county highways. It further points out that one fine brick road built two years ago at a cost of \$70,000 was recently practically ruined in the course of a few weeks by extra activity in motor truck freight haulage. In the northwestern part of the same State the writer recently had occasion to drive over roads which he had traveled more than a year before. At that time it was a macadam pike in excellent condition. Now it is a trail of cuts, gullies and ridges, nearly impassable in dry weather, altogether so in wet, all the results of a few months of heavy trucking.

When it is remembered that a good modern highway costs about the same as the roadway of an interurban railway it will be seen that, from the standpoint of helping out the government-controlled steam railroads and facilitating local transportation, county officials might with far more reason build and maintain roadways for electric railways than highways for the benefit of those engaged in the business of freight haulage by the way of motor trucks. This is another instance where sane, wide-open publicity in widely-read local papers would redound not only to the advantage of the railways but of the public at large.

---

### Seeing Through Walls of Brick and Steel in the Boiler Room

DESPITE all of our really remarkable work in the generator room of the power house in the way of instruments and methods for improving the operation of electrical machines, average boiler room practice is conspicuous by lack of actual measurement of conditions and results. On the average we are much like the merchant who accounts for his sales to the minutest detail but lets the other equally important end of his business, the purchases, take care of itself. In other words, the average boiler room needs, and needs sadly, methods and instruments for the determination of operating conditions. Our firemen need eyes wherewith to see through the walls of brick and steel of their machine. This need has been recognized by the United States Fuel Administration, as the first three recommendations of its engineering division relative to fuel saving pertain to this very thing. The day is past when a fireman, no matter how skillful and faithful to his task he may be, can by sighting at the fire over his corn-cob pipe tell whether a boiler is successfully doing its work. The steam gage, the pop valve and the gage cocks, introduced as they were to keep the boiler from starting off on privately conducted skyrocket trips, give no indications relative to a lot of other necessary things.



To-day not only the development of new methods and processes, but the successful operation of existing processes, is largely dependent on the use of instruments which tell the story of what is happening on the inside of things. In the field of electrical engineering, for instance, such instruments have attained a very high degree of perfection. The power output of a 50,000-kw. generator is measured as easily as is the time of day, and the oscillograph has permitted a study of the currents inside a machine almost as readily as a schoolboy studies the motions of a pollywog with a magnifying glass. And, take it all in all, a battery of steam boilers is to-day a more complicated thing to operate than is an electrical generator. We need to know whether each boiler is doing its share instead of "loafing," how much fuel and water are going into it, the amount and quality of its output, the amount of unburned fuel in the ash pile and the smoke, the draft, the amount of excess air and the amount of heat going up the chimney. It takes more than our five senses to tell us about these things. When they are known we have first-hand knowledge as to whether the dampers are set right, the baffle walls intact and the stoking correct. More important, we know it at once if the losses become excessive, for after all knowledge of losses is more important than knowledge of efficiency. If we know the losses are small there can be no question as to what the efficiency is, and the losses are the easiest things to get in contact with.

Many instruments, more or less perfect, for determining the above details and relations are on the market. More and better ones will appear when boiler users learn of their need and value. Even now records are available where plants burning as little as 600 tons of coal per month have paid for a complete instrument equipment out of the fuel savings of a very few months. Obviously the meters must be well selected and conveniently located and, in general, recording instruments are best. In any event meters that will assist the fireman are the ones needed. The old idea of meters to "show up" the men is all wrong. The men should be instructed as to proper use of the instruments and stimulated to use them in securing better results as the product of the efforts. Only when it is put up to the men that the instruments are helpers and not detectives will the best results be secured.

---

### Too Much Home Manufacture Bars Progress

THE chance remark, "Is that scheme patented?" by a manager whose property built very large shops a long time ago, made us realize recently what a handicap eventually may be suffered by the railway which has loaded itself down with a manufacturing plant. This particular property never had such an impelling motive as isolation for making almost anything that can be made. Its railroad facilities are splendid and it is also within a few hundred miles of great manufacturing and distributing centers. This was true when, nearly twenty years ago, the then management erected a large plant and so tied up a large amount of money.

What has been the result? An almost absolute cessation of progress. Every time specialist manufacturers brought out better products—whether trolley wheels, destination signs, door mechanisms, brake shoes or

what not—they knew it was next to hopeless to get this railway to use the devices, for didn't the railway have masterly mechanics who could produce something just as good and a lot cheaper at that? The management which had made the decision of course felt that it must keep the big plant busy, even if it did turn out products which meant higher operating and upkeep costs.

The situation is considerably simplified in this case because a new management is now in charge which is not bound by precedent and does not have to swallow the mortification of acknowledging a blunder. The new management frankly realizes that no one railway could possibly have more inventive talent than all the specialist manufacturers who have the entire experience of the industry to draw upon for ideas. Therefore this railway is now working on the sound basis of using the best there is, even if it cannot be made at home.

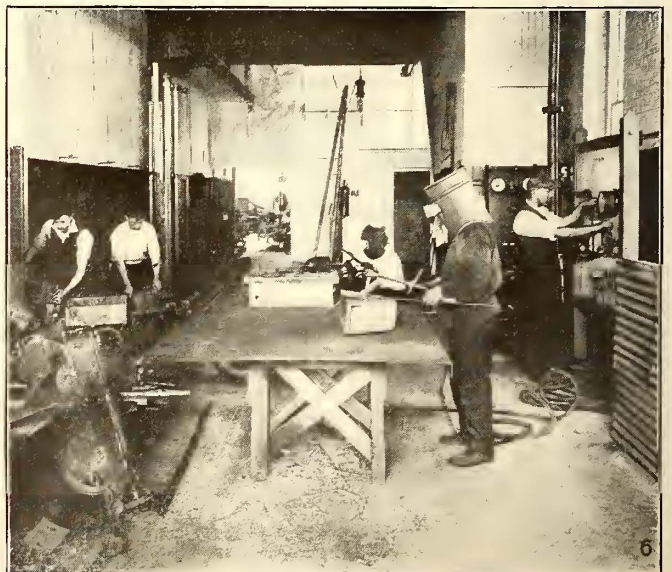
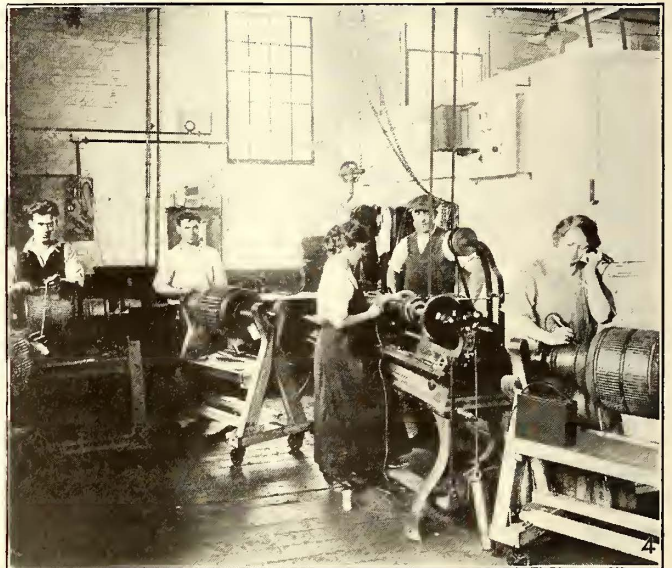
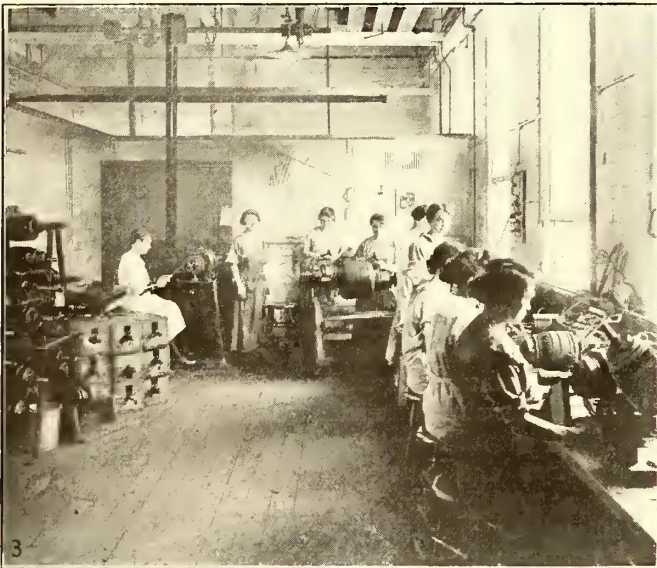
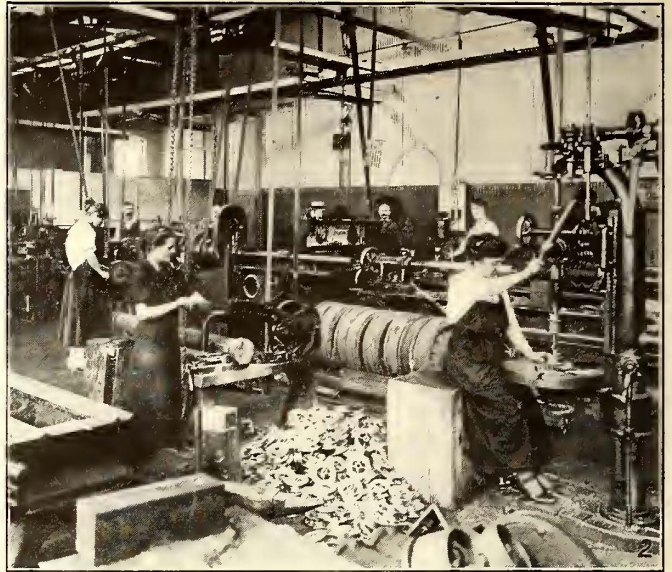
---

### San Francisco Bus Philanthropy Willfully Misunderstood

THE figures published elsewhere in this issue on bus operations of the San Francisco Municipal Railway are rather mournful evidence that municipally-owned lines are not learning much from the sad experience of privately-owned electric railways, that subsidizing the suburbanite is the road to bankruptcy. The Municipal Railways management is too capable not to realize that you cannot make money by handing the maximum haul rider a free bus ride as *lagniappe*. Therefore, this is frankly a development proposition in which the municipality as a whole may recoup itself for transportation losses by more taxes from appreciated realty values. In such a case the municipal transportation should be grouped with the parks, charitable institutions and other municipal undertakings from which no profit is expected. But if the street railway and auxiliary bus service are not to be self-sustaining, let the public so understand. Unfortunately, whatever the views of the operators may be, the demagogic newspapers of San Francisco and elsewhere still insist that municipal railways are necessarily profitable because they are municipal.

How much harm such misrepresentation is doing can be conceived from one instance in which this very San Francisco bus philanthropy was used as proof positive that the bus was cheaper and better than any street car could be. The bus protagonist, we learned, got his idea from a newspaper clipping which we espied on the wall of his office. This clipping had a line-up of the buses referred to in our article over the cheery caption "San Francisco Municipal Buses a Huge Success." The article gave no costs whatever but did say the buses were giving fine service and making money for the city. To some minds all intake is clear profit. That seems to have been the case with our interlocutor so far as buses are concerned. It was a hard task to convince him that the city, through its own railway, was really conducting a charity for a select few of its suburbanites and that the citizens as a whole had to foot the bill. If a street railway reformer can fall into such blunders, what shall we say of the run-of-mine citizen?





SCENES IN THE CONNECTICUT COMPANY'S RECLAMATION SHOP

Figs. 1 and 2—General Views in the Machine Shop. Fig. 3—The Armature Winding Room Where Only Women Are Employed. Fig. 4—Banding and Testing Armatures. Fig. 5—Receiving Section with Typical Piles of Equipment Parts. Fig. 6—Welding Division with Two Very Common Jobs Under Way.



# Connecticut Company Centralizes Reclamation Work at New Haven

By Segregating Heavy Repairs, Manufacturing Operations and Reclaiming of Damaged Equipment This Company Has Achieved Substantial Economies—The Feminine Element Bids Fair to Predominate in the Reclamation Shop

A CONSIDERABLE step in the direction of rolling stock maintenance economy has been taken by the Connecticut Company during the last few months by the installation of a "reclamation" shop at New Haven. The management was convinced that by relieving the division shops of everything but routine maintenance work it would be possible to reduce labor and materials costs for several reasons. In the first place, the work of the division shops would be facilitated because there would be no distraction due to special jobs of all kinds. Again, such detailed parts as the company found it wise to manufacture could be made best at a central shop. Most important of all, a shop whose specialty is reclamation work would naturally use every means available to make the most of broken or worn-out equipment. The reclamation shop is proving of great assistance along the lines indicated, especially in view of the acute labor shortage.

The shop is at the corner of Ferry and River Streets, where there are excellent water and railroad transportation facilities. It is part of what was originally a paint shop, later used as a storeroom. From this have been partitioned off a large general machine shop and a long narrow room partly used for the reception of pieces to be repaired and partly for welding work. Portions of the large room are in turn partitioned off to form a winding room and an office. The general appearance of these several sections is shown in the photographs reproduced on the opposite page.

The local or division shops will continue to take care of light repairs, including those of open circuits, grounds, etc., where rewinding is unnecessary. The reclamation shop is entirely independent of the maintenance shop at New Haven, being located in a different section of the city.

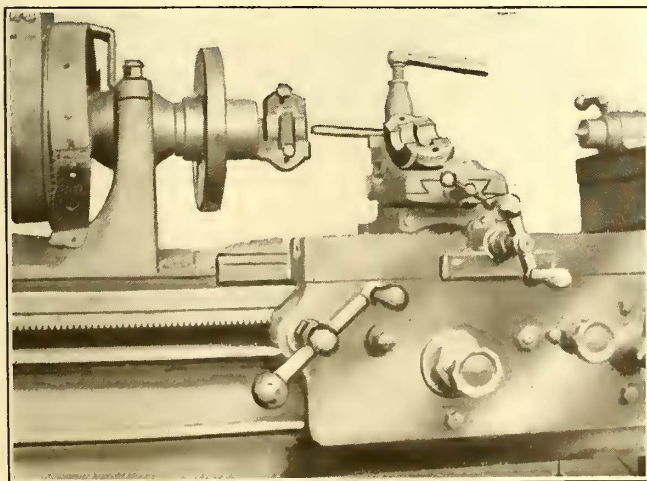
Before the present plan of centralized reclamation was inaugurated it was necessary to send out a good deal of the winding work, but this will no longer be necessary. The new shop is able to handle not only the work on the rolling stock but also helps out the power department. For example, at present the trucks for a traveling crane to be used in the coal storage yard connected with the power plant at New Haven are being fabricated. Other special jobs now under way are the building of some pit jacks for use in the maintenance shops and some apparatus for handling sand pneumatically.

The work of the reclamation shop is greatly facilitated by the regular operation of the general storeroom supply car, which reaches every division of the property once a week. The car moves in accordance with the following schedule: Monday—Bridgeport, Westport, Norwalk, Stamford and Port Chester; Tuesday—loading at storeroom; Wednesday—Meriden, New Britain, Hartford and Middletown; Thursday—loading at storeroom; Friday—Waterbury (via Cheshire) and Derby.

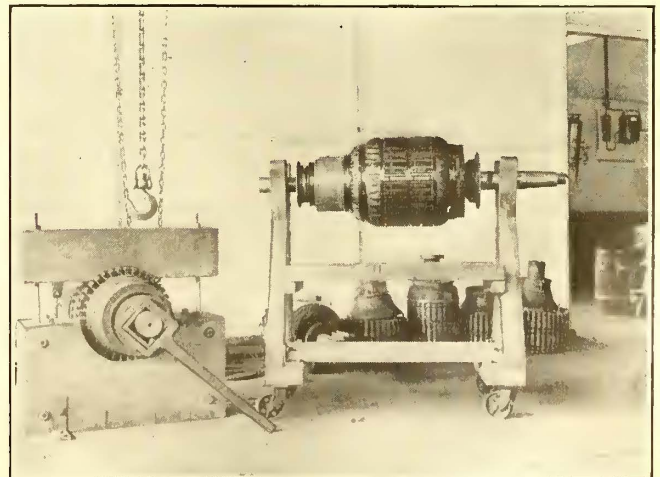
The supply car gathers up all material which is to be welded, armatures to be repaired, etc., and in return delivers repair parts and supplies. The car is run right into the reclamation shop on a special track laid so as to facilitate the handling of the equipment.

## NEW SHOP HAS VARIED EQUIPMENT

In the armature section of the shop the principal equipment consists of an armature coil winding machine, a field winding machine and a banding lathe. In the machine room are three engine lathes, a turret lathe, a boring mill, an axle lathe, a key seater, a drill press, a hacksaw machine, an emery grinder, a 100-ton wheel press and an axle straightener. The power supply



CHUCK FOR HOLDING COMPRESSOR MOTOR ARMATURE BEARING DURING BORING PROCESS  
(Cap of chuck rests against tool post)



AT LEFT, WOOD CLAMP USED FOR HOLDING ARMATURE WHILE COMMUTATOR NUT IS BEING TIGHTENED.  
AT RIGHT, STANDARD ARMATURE STAND



**THE CONNECTICUT COMPANY**

Daily Report Reclamation Shop Production

New Haven, Conn. \_\_\_\_\_ 19\_\_

Mr. H. W. Beeba,  
Supervisor of Equipment,  
New Haven, Conn.

Dear Sir:-

To-day \_\_\_\_\_ the following finished products were turned out at the Reclamation Shop.

SHOP ORDER	QUANTITY	ARTICLE	DIVISION	CHARACTER OF WORK

SIGNED \_\_\_\_\_  
Master Mechanic

SUPERVISOR'S DAILY REPORT FORM

for the shop is a 50-hp. motor operated from the trolley circuit.

Overhead in the shop is a Columbia overhead trolley bar which serves the lathes and other machines, chain hoists being used on this at present. The shop is supplied with air, however, for the purpose of permitting the use of air hoists which will be installed later.

One of the most important parts of the work of the shop is the electric and gas welding. The section devoted to this purpose contains a Westinghouse 150-amp. generator and a Wilson 150-amp. generator. There is also a large motor-generator set of foreign make which was purchased from the Atlantic Welding Corporation to furnish heavy current for rough cutting work. For general cutting purposes an oxweld gas outfit is preferred.

**PROCEDURE IN CONNECTION WITH REPAIR WORK**

When a piece is to be repaired in the reclamation shop the following course is pursued : As the piece leaves the division carhouse it is tagged with a round aluminum tag containing a serial number. At the carhouse a list of the tag numbers is kept, and a shop order is made up from this list calling for the necessary repairs and giving requisite specifications. This tag number follows the job throughout its course and all labor and material are charged to it.

It is impracticable here to go into all details of the

operation of the shop, but a few examples have been selected to indicate the scope and method of its work. For example, an important item is the repair of gear cases. For use in patching these by welding all kinds of sheet metal are collected from the system, including old dasher iron, scrap steel, old stack plates, controller covers, etc. Besides gear cases, this shop also welds motor shells, armature shafts, car axles, truck frames, journal housings and many other parts. One operation which has proved very profitable, here as elsewhere, is the cutting down of broken car axles for use as motor armature shafts, and the reclaiming of armature shafts by welding.

When a shaft is broken it is reclaimed by welding if the break comes inside the bearing, but not if it comes between the end of the bearing and the end of the core. In reclaiming, the broken ends are turned down to conical form, and a 1/2-in. dowel pin is used to center the two broken parts. After the cylindrical groove has been filled with the welding material and

G 505 **FOREMAN'S REQUISITION FOR MATERIAL** 191

To Storekeeper:  
Please deliver the following to bearer  
Charge to \_\_\_\_\_

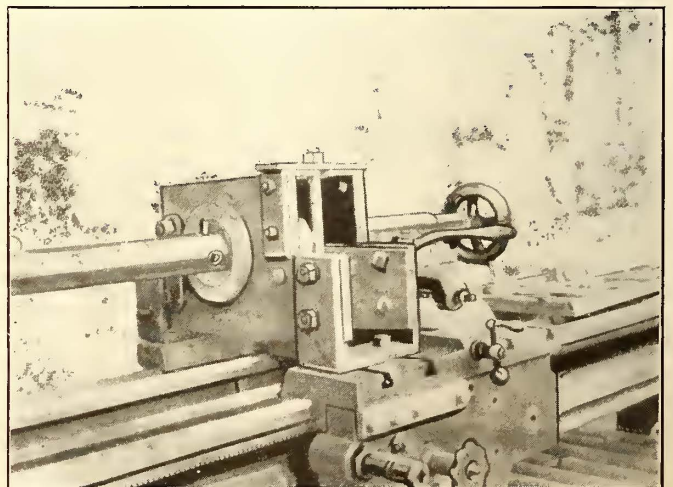
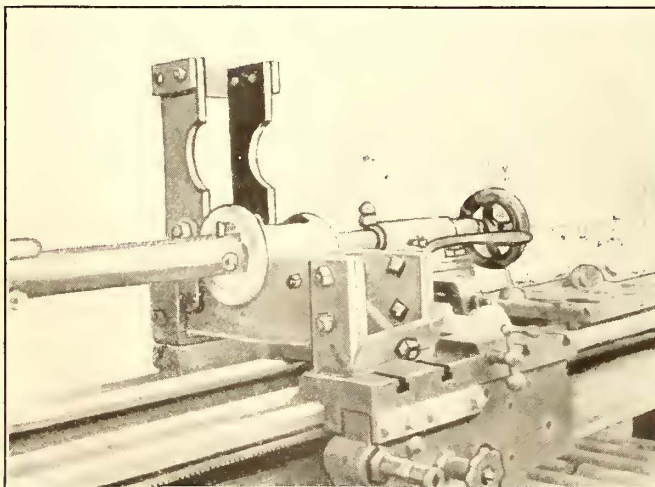
Quantity	DESCRIPTION	Weight or Measure	Price	Amount

Delivered \_\_\_\_\_ Prices and extensions correct Signed \_\_\_\_\_  
Foreman.

A SIMPLE FORM OF REQUISITION ON STOREKEEPER

the axle has been turned off, it is found to be practically as good as new, especially as the weld is not subjected to any bending moment.

In the line of manufacturing operations the shop is making all trolley wheels in 4 1/2-in. and 5 1/2-in. sizes, turning all axles and armature shafts, making axle bearings and linings, armature bearings, compressor crankshaft bearings and compressor armature coils. Practically all rewinding work for the Connecticut Company's system, including both air compressors and car motors, is done in this shop.



JIG FOR HOLDING AXLE BEARING DURING BORING PROCESS. AT LEFT, JIG OPEN; AT RIGHT, JIG CLOSED



As the shop is new there has not as yet been time to develop the full line of jigs, mandrels, chucks, etc., which will eventually be required, but a number have already been finished. A few of these have been shown in the small photographs reproduced with this article. One of these is a jig for holding axle bearings during the boring process after they have been turned on the mandrel shown in the pen sketch on this page. The jig consists of a lower part which rests on the lathe bed with an upper part hinged to it, a simple clamp serving to hold the two parts together with the bearing in position. The photographs show the jig open and closed. The mandrel, mentioned above, holds the two-part bearings in place by means of clamped nuts. Another device shown is a lathe chuck for use in boring compressor bearings. The chuck consists of two pieces recessed to accommodate the bearings, one attached to the lathe face plate and the other bolted to the first as indicated.

Among other interesting devices in the shop is the wood armature clamp shown in one of the pictures, which is used to hold the armature securely while the commutator nut is being tightened. This clamp serves greatly to reduce the amount of labor required in the simple operation. The same picture shows the standard armature stand used in the shop.

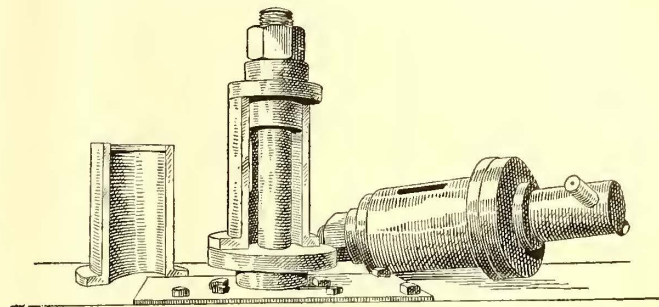
**ONE-HALF THE WORKERS IN THE SHOP ARE WOMEN**

The total force employed in the new shop at present numbers twenty-four, including one clerk. Twelve of the employees are women and they are engaged as follows: One makes all coils, including field coils for air compressors; one does the banding on all kinds of armatures; two run engine lathes up to 14 in., but the

but data are being accumulated for the purpose of enabling specially skilled workers to receive commensurate rewards for their work.

**STEPS IN THE DIRECTION OF STANDARDIZATION**

The management of the Connecticut Company realizes that to make the most of this new shop it is necessary to have accurate and complete records. For this purpose a few simple forms are being developed, as shown on this and the preceding pages. One is the requisition form which applies to the work of the reclamation



MANDREL FOR HOLDING AXLE BEARING DURING TURNING PROCESS

shop as well as to all supplies. Another is a form which shows exactly how much work has been turned out in the shop each day, thus giving a convenient check on the relation of output to number of employees. The third is an experimental form which is being tried out with a view to accurate allocation of costs, as well as determination of the speed with which work is being put through the shops. Obviously these cost charts will be very valuable if later the premium system is put in. The shop has been operating such a short time that no cost data are as yet available, but considered as a whole there has been a very noticeable saving in labor and materials. It is hoped that in a short time actual cost figures can be given. In view of the facts that practically all of the machine tools were taken from the existing shops and that no new buildings were required for the present undertaking, the required investment has been very small.

**Snow-Fighting References**

The Library of the Bureau of Railway Economics at Washington has recently issued a fifty-three-page mimeographed list of references to articles on "Winter Service on Railroads." It is divided into five parts, namely: (1) Maintenance of way in winter in the United States; (2) operation of railroads in winter in the United States; (3) snow fighting on electric roads; (4) winter service conditions in Alaska and Canada; (5) winter service conditions on European railroads. There are thirty references in Sec. 3, and some of the references go back to as far as 1891.

The following references to recent articles in the ELECTRIC RAILWAY JOURNAL are supplementary to the above list, which is not very complete with respect to electric railway snow-fighting: Mar. 23, 1918, page 579; Feb. 16, page 332; Feb. 9, page 285; Nov. 24, 1917, page 951; Nov. 3, page 826; Feb. 17, page 304; Jan. 6, page 39; April 1, 1916, page 658; Jan. 22, page 162; Jan. 8, page 94.

<b>Reclamation Shop</b>						
<b>COST CARD</b>						
Order No. _____			Tag No. _____			
Description _____						
Date	Workman	Hrs.	Rate	Date	Material	Cost

EXPERIMENTAL FORM FOR COLLECTING COST DATA

work is put into the lathe by a man; eight are armature winders trained to do work on all kinds of armatures.

It has been found that after reasonable training women are able to do as good work in winding as the men, but of course it is necessary for them to have assistance in heavy moving, transferring armatures from the stand to the banding lathes and to the storage racks, etc. The women are paid the same rates as the men for the same work.

The company is considering putting a premium system into operation in this shop where the work seems admirably adapted for this purpose. At present the operations have not become sufficiently standardized,



# Snow Fighting in Montreal\*

How a Far Northern City Keeps Its Streets Clear During Its Long, Severe Winters—  
Esprit de Corps in the Organization Essential to Success

BY ARTHUR GABOURY

Superintendent Montreal Tramways

THE snow-fighting force of the Montreal Tramways comprises three separate elements, each necessary to a successful, complete unit. They are: *Experience, Esprit de Corps and Machines*.—Experience in every one of the employees of the snow-fighting staff, from the head down to the switchman; *esprit de corps* between every one from the head down to the switchman and entire confidence in one another; and machines, the best that science and experience have so far produced.

These three elements combined and added to a staff of assistants and carmen imbued with the determination to overcome obstacles is the secret of the successful results obtained in the past years in maintaining a car service for the public of Montreal during snow storms and blizzards.

The snowfall for the last twenty winters has averaged 104 in., but last winter we had 128 in., that is to say, nearly 11 ft. When it is said that our sweepers were sent out for the first time on Nov. 23 and that they were out sixty-five times afterward, it will tell you that the lot of a tramway man is not what you may call a very pleasant one in the winter. On the other hand, looked upon from the right angle, there is a lot of real sport in it, as there is in fighting snow the same ambition to win as there is in playing hockey or lacrosse.

In the early days of our industry, when street cars were in the experimental stage and all other conditions somewhat similar, all we could do was to do our best. When beaten by the Storm King, the public had to wait or walk, but today the public demands not only that we keep our cars running but that we run them on time, and in spite of our modern equipment and thorough organization we are kept on our tip-toes all the time and we are taxed to the utmost to meet the ever changing conditions that arise. Every snowstorm is different from the previous one; temperature, wind, kind of snow and road conditions are all factors, which never combine in the same way and keep all of us on the *qui vive* to overcome their different combinations.

From November until the end of March there is not a moment that we can safely say "We are out of danger."

## HOW THE EQUIPMENT IS MADE UP

Our snow-fighting battery consists of forty sweepers, six plows, twelve levelers and ten other pieces of apparatus of different styles, and most of them are of the very latest type.

Our sweepers have two rotating brooms and two wings, a large one on the right side and a small one on the left side. The large one opens a driveway for

the rigs and the small one removes the snow from the center of the tracks. Most of our sweepers are of the single truck type, but during the last few years we have had a number of sweepers of the heavy type built for the steep hills with which our city has been blessed by nature.

Our plows are of the railroad rotary type and are used on the suburban lines through the open country.

During or immediately after a snow storm our tracks are the cleanest part of the road, and all vehicles and especially autos immediately take to them, naturally to the detriment of our car service. In consequence we have had designed the levelers or wing cars to open the road alongside of our tracks wide enough to allow rigs and automobiles a safe roadway clear of our cars. Our sweeper wings push back the snow from our tracks for about 6 ft. and these levelers—which are some of our freight cars equipped with heavy concave iron wings, pushed out by mechanism—push back the snow left by our sweepers further away and leave clear a driveway of some 9 ft. for the traffic.

## HOW THE ORGANIZATION IS MADE UP

Next in importance to good equipment comes the need of making the best possible use of it, and long before the winter comes, our organization is complete and plans have been carefully thought out and drawn up. The first actual move towards the success of the winter's campaign takes place at the beginning of November each year, when a meeting of all men in charge of the machines is called and addressed by the superintendent.

This address takes the form of a friendly, heart to heart talk, which further cements the *esprit de corps*. Special care is taken to impress on each man in charge that he must feel proud to be called to act as lieutenant in this fight and that he would not have been called if it was not felt that he was the best man that could be got. Suggestions are offered by the men and considered, and after further amicable testimony of confidence, we separate, each feeling that he is an essential spoke in the wheel, and each anxiously waiting the moment that he will be able to show what he can do.

A motorman in charge and an assistant motorman in charge are appointed for each sweeper and leveler at the beginning of a winter, and these men keep their own sweepers during the entire winter, subject, of course, to the proper performance of their duty. The idea of this is that if a man is in charge of one special sweeper all the time, he will soon learn its strength and its weakness. Consequently, we get better work from both the man and the sweeper than if he worked on one sweeper today and on another one tomorrow.

To each man in charge of a sweeper is given a

\*Abstract of an address given at meeting of Montreal Publicity Association, Montreal, April 24, 1918.



certain route to cover, and he remains on this sweeper route each time he goes out and thus gets to know its difficulties and danger points and how best to overcome them. I might say that from this system a keen rivalry among the different crews has grown up, each claiming that his sweeper is the best and his route kept the cleanest. The routes laid out for the sweepers are separate and distinct from the ordinary car routes, the whole territory being divided among the four operating divisions of the company and the sweeper routes assigned to each being those which can be handled to best advantage. Each piece of apparatus is also assigned to a particular route.

#### HOW THE ROUTES ARE ARRANGED

As far as possible, the routes are arranged so that each can be completely covered by its sweeper in from forty-five minutes to an hour. The routes are also arranged so as to have one central converging point for three to four sweepers, the idea being that when help is needed, it can be quickly sent by diverting the sweeper from another route when it reaches this spot. Large blueprints of these routes are posted in the superintendent's office at snow headquarters and at each station. Smaller blueprints are also posted in each piece of apparatus, giving the detailed route of that particular sweeper or leveler.

Thus we have the routes specially defined, sweepers designated for each route, and a man in charge who is fully aware of the danger of that route and who understands his sweeper and knows how to handle it so as to obtain the best results. Hence, when the order is given from snow headquarters to pull out, there is no confusion, and no valuable time lost in asking questions. Each man knows where to go and what to do, and he simply goes ahead and does it.

The best recording barometers that science has so far produced are installed in the snow headquarters downtown as well as in the home of the man in command, and the question, "*Will it snow to-night?*" is one which he asks himself when looking at the barometer and before going to bed.

The first storm of the season is always the one awaited with the most anxiety. Sweepers have not been in use for eight or nine months, the men are more or less rusty at the first run out, switchman are not available, and all this, added to the fact that the first storm always comes when least expected, makes the men in charge do a lot of anxious thinking.

When it does come we send out the 200 odd men to man all the machines, even if they are not all absolutely needed, so as to give each machine a real test and see whether they are all ready for their winter's work. It has always been our ambition to pull out our whole snow battery in less than an hour and when this is done and the order given in time, it takes quite a blizzard to stop the movement of the cars here.

There is little worry as regards men attached to daylight snow storms. The real worry begins between midnight and 5 o'clock in the morning, and special care has to be taken so as to be able to locate our men on time if snow begins between these hours.

Call boys are held in each station and sent out to get crews as soon as the danger appears, so that all

our sweepers are ready to go out when the first flake begins to fall. Our men generally live around the stations, and as they expect to be called at any moment during the winter, it does not take them long to get dressed and get on the job, especially as each one is anxious to keep his own line better than the other fellow.

The first trouble in snow storms comes at switches and intersections. The snow blocks the switchpoint, and motormen have trouble in opening the switches. That explains the delays at intersections at the beginning of every storm. We have continually some eighty odd men looking after the hills and switches, brushing off the snow and salting the switches and the rails on the hills to keep them soft and clean, but when the storm comes some 200 additional men are rushed to help them so as to keep hills and switches in perfect condition.

Sweeper crews are also provided with good lunches when the need arises. If possible, the sweeper is pulled into a convenient siding and the crew given a good meal at a near-by restaurant. If it is not possible to spare the sweeper off the road for half an hour, cans of coffee and good sandwiches are sent to them.

#### WHAT HAPPENS AT HEADQUARTERS

Our snow headquarters are established at our central carhouse on Cote Street, where special telephones are in operation and dispatchers are at hand. Here the superintendent takes up his position at the center of the web and directs the movement of his forces.

All orders are issued from this spot and all news is transmitted there, and there is lots of it. Divisional superintendents and inspectors report every hour. Sweeper and leveler crews also report every trip, giving their sweeper number, the place they are reporting from, the ground they have covered and the condition of their road. This means some ninety calls per hour.

All this information is tabulated in such a way that the assistant superintendent in charge at the desk during the snowstorm can tell at a glance the position of each sweeper or leveler. There is a lot of thinking to do and he must be a man having the whole system engraved in his mind, as the number of telephones per minute would not allow time to consult any map. In this way a close check can be kept on the whole system and help can be sent where it is needed, and a sweeper transferred from its own line to another where danger threatens.

Our snow season begins, as I said before, in the month of November and continues right through until St. Patrick's day. The snow in December is soft and comparatively easy to handle, as the cold is not severe, but in January and February our snowstorms live up to their reputation, and when the thermometer acts in conjunction and drops to 20 or 25 deg. below zero, then indeed we have our work to do. In these two months, storms often commence one day and continue all that day and night and sometimes the next day as well, and although the snowfall is scientifically given as 10 or 12 in., this means that the streets are covered with piles of snow 3 or 4 ft. deep.

In storms like these, something more is needed than equipment and plans, and that is men. If your men are of the kind that work only for pay, then the



most complete equipment, the most carefully laid out plans will not pull you through. What you need, and need badly, are men who are real men—men who work not only for their pay but do work such as cannot be paid for in mere money.

*Esprit de corps* must permeate the whole staff from superintendent down to switchman. Men are wanted whose ideals are so well put by Kipling when he says:

No one shall work for money, no one shall work for fame,  
But each for the joy of the working.

Men who answer the call on the jump, who phone headquarters even before they are called, who pull out their sweeper at the beginning of a storm and return it back only when the storm is over, whether it is after twelve or twenty-four or thirty-six hours, and who are indignant when offered relief for a few hours of needful rest. With a staff that starts in with the storm and stays right with it, eating sometimes, sleeping at no time, but fighting at all times, you feel your feet on solid ground and are ready to do your best in the battle with nature's Storm King.

And after the storm, when the last sweeper has been ordered in and your inspectors are phoning in "cars on schedule time," you turn homewards for a much-needed clean up, tired and worn out physically, but your mind at ease, and as you see the streets piled up with snow but with the car track clean and shining in the sun, the cars filled with passengers riding safely and comfortably down to work, you are suddenly filled with a feeling of joy and pride—joy in the doing of a man's work and pride in the organization of which you are the head.

## Rotary Snowplow Operates in 18-Ft. Drifts

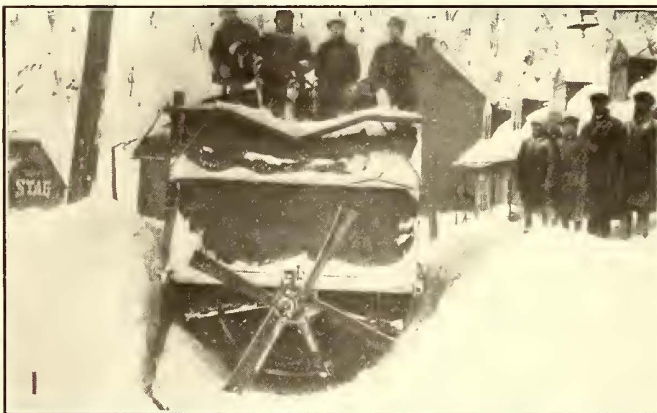
**Levis County Railway, Quebec, Canada, Confronted Yearly with Exceptional Snowfalls, Handles the Traffic Problem with Efficiency**

**T**HE Levis County Railway, Levis, Quebec, Canada, operating about 12 miles of track, is located in what is known as the Snow District of Canada. The average snowfall is about 130 in., but during the past year the average was 150 in. Snows began in November and were continuous throughout December, accompanied by extreme cold with no thaws during the cold period, so that the snow accumulated to a great height.

The worst storm of the season, which continued for twenty-four hours and accompanied by very high winds, piled the drifts up 18 ft. on the railway track. Snow slides occurred along the Quebec Bridge division and several houses were completely buried and others shifted from position.

The equipment used to disperse this almost insurmountable barrier to transportation was a 300-hp. rotary plow. This plow, shown in Fig. 1, is equipped on the front with rotary blades which cut the snow. Back of these are rotary paddles which deliver the snow some 15 ft. through a funnel in either side of the plow.

By means of this plow the St. Joseph division was opened and normal operation effected on the first afternoon that the plow was placed in service. During the night the Levis upper town division was opened and on the following morning the plow began work on the 7-mile trip to the Quebec bridge. Immense drifts and snow slides had to be overcome along practically



BUCKING SNOWDRIFTS IN QUEBEC, CANADA

Fig. 1—300-Hp. Rotary Plow Operating in 10 ft. of Snow. Fig. 2—Plow Assisted by Shovelers, Operating in 9-ft. Snow Slide. Fig. 3—Plow Backed Up to Show Depth of Snow. Fig. 4—A Typical Cut Through a Snow Drift After the Rotary Plow Has Completed Its Work.



the entire course and it was on this division that the company photographs were taken. The Levis County Railway supplies the only direct way to the Quebec bridge site, the bridge itself being only a five-minute walk from the terminus of the company, and it was essential that the tracks be cleared with the least possible delay.

## Effective Snow Boards for City Service

### Detroit Uses Interesting Type of "Drag" Board Suspended Under Rear Platform of Either Single or Double-Truck Cars

THE Detroit United Railway for many years has been using what is called a "drag" board, or snow board, to remove the snow and slush from city car tracks and to throw it to one side of the rail. Details

beam by a pin. This arm maintains the board in a vertical position and at the same time pivots on the pin to allow vertical motion in passing over rough spots in the pavement.

Attached to the board are wrought-iron hinges made of  $\frac{3}{8}$ -in. x  $3\frac{1}{2}$ -in. stock. From these hinges, as clearly indicated in Fig. 1 and shown in Fig. 2, a heavy drag chain passes back to a clevice. These chains, together with the twisted arm, hold the board in position when the car is moving forward.

A third chain, which is attached to the board by means of an eyebolt and to the end of the car sill by means of a screwbolt, prevents the board, also held in place by the arm, from swinging under the car and trucks when the car is backing up.

Chains suspended from the car sills hook into wrought-iron clips which are made of  $\frac{3}{8}$ -in. stock  $1\frac{1}{2}$  in. wide and bolted to the drag board. By means of these chains the board may be hooked up 4 in. above the rails and carried in this position when not in service.

Fig. 2 shows the car also equipped with a guard board attached to the right-hand rear vestibule corner post by means

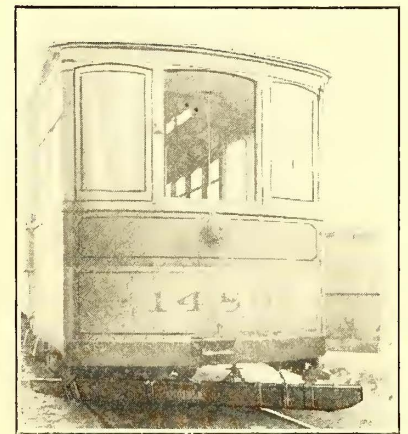
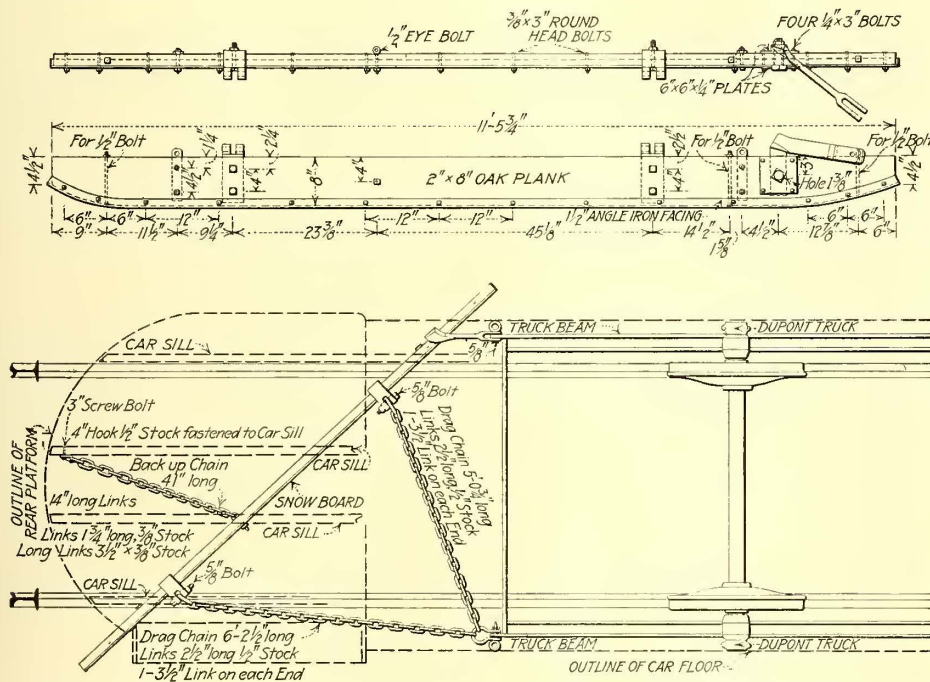


FIG. 1.—DETAILS OF CONSTRUCTION AND ATTACHMENT OF SNOW BOARD, DETROIT UNITED RAILWAY. FIG. 2.—SNOW BOARD IN OPERATION ON DOUBLE-TRUCK CAR

of the construction of the board and of its attachment to the car are shown in Fig. 1.

The boards are made of 2-in. oak plank 8 in. wide with a steel heel of  $1\frac{1}{2}$ -in. angle iron. They are  $11\frac{1}{2}$  ft. long and slope up at the end to prevent striking any obstruction outside the rail, such as high spots in the pavement.

The method used in applying these to the rear end of the car shown in Fig. 1 is for a single-truck car, but the application to double-truck equipment is the same except that the drag chains are fastened to the car body instead of to the truck. The double-truck attachment is quite clearly illustrated in Fig. 2.

Referring again to Fig. 1, the reader will be able to note the location of the following attachments. A wrought-iron arm 1 in. x  $2\frac{1}{2}$  in. bent at a 90-deg. angle is attached to the board. At the point of the angle, at the top of the board, this brace is twisted 90 deg. so that it extends back with the narrow edge vertical. The end is pronged and fastened to the truck

of hooks. This is to prevent passengers, after alighting, from being tripped by the snow board, which projects a little beyond the body of the car.

When immediate service of the boards is not anticipated they are stored at the various carhouses on racks adjacent to the loop where the cars turn. Here they are handy and can be attached to the cars in a very few minutes by simply placing two pins, one for the drag chains and one for the arm bracket, in position, and hooking in place the back-up and suspending chains. All cars are equipped to carry the snow boards, but as a general thing it is necessary to place them on only every fourth, fifth or sixth car, depending upon the severity of the storm. These boards have proved of great value to the United Railway in keeping city tracks clear and have, it is believed, often made unnecessary the use of heavier snow-fighting equipment and avoided many delays in schedules and possibly even more serious tie-ups. The first cost is small, the maintenance negligible, and the service rendered inestimable.





CUTS THROUGH SNOW DRIFTS, CHICAGO, SOUTH BEND &amp; NORTHERN INDIANA RAILWAY

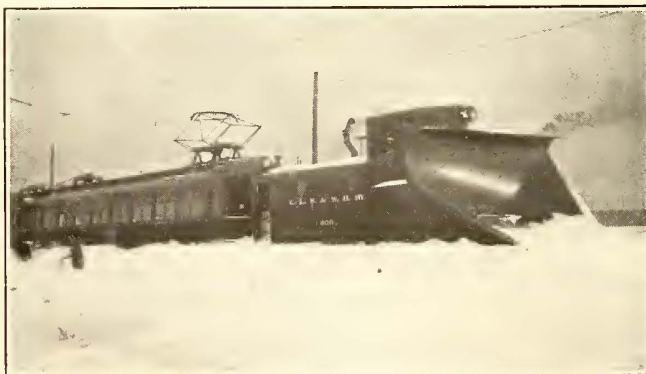
## Fighting Snow on the Interurban

Middle West Roads Had Unusual Experiences  
Last Winter

SOME idea of the difficulties which beset electric railways during last winter, particularly in the Middle West, can be inferred from the accompanying views of snow scenes on two roads in northern Indiana, where the winter was the most severe that has been experienced in that vicinity for many years. The snow was unusually heavy, and because the temperature was so low became packed too hard for any equipment to handle it satisfactorily. Much damage was also done to equipment, as it was not uncommon for the armature shafts to be twisted off while the drifts were being fought. While the winter of 1917-1918 was unusually severe the experiences suggested by the photographs are worthy of record.

The Chicago, South Bend & Northern Indiana Railway, which has one large rotary plow and four smaller plows, besides a number of sweepers, equipped also many passenger and freight cars with plows. This company was unable to give normal service on all divisions until Feb. 9, following the first severe storm on Jan. 11.

The entire length of the line was buried under drifts ranging from 2 ft. to 16 ft. deep, and from 400 ft. to 2000 ft. long. On account of the equipment being tied up it became necessary to hire men to clear the tracks by shoveling. W. F. Carr, engineer maintenance of way, was killed by the overturning of a plow of which he was in charge when it struck a drift just after the crew had rescued passengers in a car which had been stalled for several hours.



SNOW-FIGHTING SCENES ON THE CHICAGO, LAKE SHORE &amp; SOUTH BEND RAILWAY

## Storage of Bituminous Coal

Limitations as to Permissible Amounts Set by  
Administrators

AT A meeting of state fuel administrators held in Washington on Aug. 20 it was decided to be necessary to limit the amount of coal storage that industrial plants will be allowed to accumulate and carry on hand. Coal in excess of that required for current operation will be delivered to plants not on the preference list only when it is not in demand for use before April 1, 1919, by consumers on that list, which includes public utilities.

The number of maximum days storage which will be allowed to public utilities in a number of the states are as follows: Maine, 120; Massachusetts, Vermont, New Hampshire, northern New York, 90; Connecticut and Rhode Island, 75; southern New York, New Jersey, Delaware, eastern Pennsylvania, 30; Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Georgia, Florida, western Ohio, 30; western Pennsylvania, West Virginia, eastern Kentucky, eastern Ohio, 30; lower Michigan, 90. It is understood that particular cases may require special treatment.

Any company which is permitted under the zoning regulations, now or hereafter in force, to obtain coal from Illinois, Indiana or western Kentucky, or from mines west of the Mississippi River, may retain such reserve stock of coal as it shall have on the effective date of the ruling, on condition that such company or concern shall thereafter use screenings or mine run only for its current necessities, and shall obtain such screenings or mine run for its use only from such last-mentioned fields.



# How Zone Fares Are Collected

## Resume of European and American Practice, Showing the Methods Adopted to Facilitate Collecting of Fares and Checking of Distance Traveled

**M**OST railway managers will readily admit that the zone system of fares, in which the fares charged have some proportion to the distance traveled, is a more logical basis of charge than the flat fare. The principal objection urged against it in the past has been the difficulty of obtaining a correct accounting between conductors and the company and of checking the riders to see that they do not ride more than the distance paid for. The great interest now manifested in the subject, however, prompts a brief comparison of the systems now in use for fare collections and registration.

Most of the European tramways and bus lines use the zone system of fares. The fares are collected by a conductor who passes through the car, as was formerly the custom in this country. The passenger tells how far he wants to go, and after paying his fare he receives from the conductor a ticket punched or marked by tear or pencil to indicate the stated point of destination. These fare receipts, two which are reproduced herewith, bear a serial number and also may have separate figures and initial letters to identify the conductor or route still more readily. The more elaborate do not look unlike American transfers. Sometimes the color of the ticket differentiates the inbound and outbound trips. Sometimes, too, the ticket specifies the hours of the day, but usually not. Every ticket says that it is non-transferable and good for that particular ride only.

The passenger retains the receipt during his trip and must keep it within view, so that it can be readily examined by an inspector boarding the car at any time. When the passenger leaves the car, he is not required to give up the ticket but may take it with him or throw it away.

The system on the whole is crude, and it seems to the average American as if it could easily be beaten by both passengers and employees. For example, there is little or no safeguard against the issuance of an old ticket by a conductor except that he is supposed to tear each ticket when issued from a roll or pad, and no safeguard against the use of an old ticket or over-riding by a passenger except the vigilance of the conductor and the inspector. It should be remembered, however, that prosecution in most European countries in the case of either passenger or conductor who attempts to defraud the company is likely to be much more swift and sure than in America.

From the American point of view, however, the system, even if perfect as regards proof against fraud, possesses two serious objections. One is that the conductor has to collect the fares by passing through the car. The second objection is even more important. It

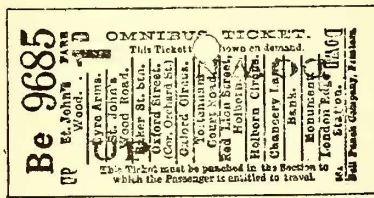
is that inspectors have to be used to check up passengers. These inspectors are supposed to board and pass through a car quickly, but it would take much longer for them to get through the larger cars in America, and such a task would be practically impossible during the rush hours. Moreover, the additional labor charge would be prohibitory. If the zone system were applied in this country, it would seem that one improvement might be for the passengers, when leaving the car, to drop their tickets into a box. These could be subsequently collected by some employee other than the conductor and then checked by their serial and other numbers.

The Milwaukee zone system was originally designed for operation with both pay-as-you-enter and pay-as-you-leave cars. Passengers inbound from suburban zones, when riding into the city single-fare area, were to be required to pay the entire fare upon boarding the car. They would not secure receipts but would receive transfers in case they wished to ride on some transfer line in the city. Passengers who boarded a car in the suburban zone, wishing to ride to some other suburban point on the same line and not through or into the single-fare area, would pay the entire fare and receive a receipt. This receipt they would then be required to surrender upon leaving the car.

Passengers who boarded the car inside the single-fare area to ride into some suburban zone were to be required to pay the city fare upon boarding the car. When they left the car the additional zone fares corresponding to the one or more zones across and into which they had traveled since leaving the single fare area were to be collected. Passengers boarding outbound cars in a suburban zone to ride into some other zone were to be required to pay the entire fare upon boarding the car. Like passengers inbound and traveling under the same conditions, they were to receive receipts which they would surrender upon leaving the car.

Thus it would appear, under this plan, that all outbound passengers would be required either to pay a fare upon leaving the car or present a receipt. The receipt contemplated under this plan naturally would become valuable to the passenger to whom it was given, as he would either have to surrender it when he left the car or be required to pay additional money.

Presumably the reasons why the system just described was not put into effect in Milwaukee were that it involved a change from the old method of passing the fare box through the car at zone points, and that it required a different plan for paying for an inbound ride and an outbound ride. It also required a different plan of payment for passengers in or out from the central zone and those simply from one suburban zone to another



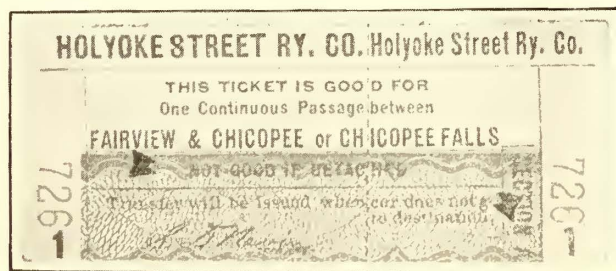
FARE RECEIPTS USED ABROAD



or within one suburban zone. On the other hand, all passengers would pay on the platform. The plan actually put in use in Milwaukee sacrifices this last advantage, though possibly it is more simple for the passenger. Under both plans the passenger whose ride begins and ends within one zone pays only 5 cents, whether that zone is the central zone or one of the suburban zones.

#### PLAN NOW USED IN MILWAUKEE

Under the existing practice in Milwaukee passengers who originate in the suburban territory and are inbound pay the entire suburban and city fare when they enter the cars. Those who plan to ride through only one or two zones signify their intention to this effect to the conductor and pay only the fare charged for such a ride. When the central zone is reached, the conductor glances through his car to see whether there are any passengers in it who have not paid to ride into the



TWO-ZONE TICKET USED IN HOLYOKE

central zone. As there are only a few in any case who do not pay the full fare in advance, he can easily remember them. He then passes through the car and collects the additional fares with a portable fare box.

On outbound cars passengers who board the car within the city single-fare area pay only the city fare. When each zone point is reached the conductor goes through the car with a portable fare box and collects the zone fare either in tickets or coins. An exception to this rule is the plan practiced on the South Milwaukee line, where on account of congestion the entire fare is collected upon boarding.

A 5-cent initial fare is charged which is good within the central zone or good for a ride wholly within one of the suburban zones or from one suburban zone to another. The fare to ride through each additional zone is 2 cents.

Although in many respects satisfactory, the management of the Milwaukee Electric Railway & Light Company does not consider the present plan, by which the conductor passes through the car and collects fares in a portable fare box, as a final solution. It regards the present method as temporary and subject to supersession in favor of the plan as originally developed. It believes that the conductor should, if possible, remain on the platform, and if any fare receipts or coins are to be collected they should be deposited in a stationary box under supervision of either the motorman or the conductor. Neither should have access to the box.

#### PITTSBURGH HAS PAY-ENTER-PAY-LEAVE

In Pittsburgh there are only two zones in the city proper, the fare being 5 cents for a ride entirely within the central zone and 7 cents for a ride between any point

within the central zone and any point in the outer zone, or between two points in the outer zone. The cars are operated as pay-as-you-enter on the inbound trip and pay-as-you-leave on the outbound trip. On an outbound trip those who leave before the single-fare zone boundary is crossed pay 5 cents, and those who leave after the boundary is crossed pay 7 cents. Conversely, with an inbound car, those who enter the car at the suburban zone pay 7 cents and those who enter after the zone boundary is crossed pay 5 cents. There has been no difficulty in collecting 7-cent fares from passengers as they leave the car.

This plan, of course, requires that the rate of fare for any passenger who begins or ends his trip within the suburban zone shall be 7 cents, regardless of whether he travels through parts of two zones or only through a part of the suburban zone. The company believes such a fare justified for two reasons. First, the average length of ride per passenger is greater in the 7-cent area than in the 5-cent area. Second, the number of passengers on each car in the 7-cent area is less than that in the 5-cent area, so that the cost per passenger is very much greater in the 7-cent than in the 5-cent area. Moreover, even if it were logical to base the charge on the distance ridden alone it would not be practicable to collect the fares on any such basis in a large city.

Two registers are used, one for the 7-cent fares and one for the 5-cent fares. Only one of these can be operated at a time, and when the car is passing from one fare area to the other the conductor has to go forward in the car and change certain mechanisms, so that the operation would be noticeable to the passengers if performed at other than the proper time. Thus both error and dishonesty are eliminated. Eight of the 7-cent tickets are being sold for 55 cents, and these tickets are rung up on the 7-cent register. All fares are collected on the platform, but fare boxes are not used.

#### THE PROVIDENCE METAL-TICKET SYSTEM

In Providence there are for the city cars one central zone and two suburban zones, the fares being 5 cents for a ride wholly within any zone and 2 cents more for each additional zone. For a number of years the Rooke register has been used for city fare collection, the conductor passing through the car and collecting the fares after the passengers are seated. This plan is still followed except that the conductor collects an additional 2 cents whenever the car passes a zone boundary.

This 2-cent fare is collected by means of a 2-cent metal ticket which the conductor sells to the passenger and immediately receives back through his Rooke register. This plan was considered better than to have the passenger deposit two 1-cent pieces in the register, as that would have required two registrations instead of one. It was also considered better than to have the passenger pass 1 cent through the register and hand the other to the conductor, because such a plan would cause an exception to the rule of the company that all money must pass through the Rooke register.

On inbound trips, inasmuch as the destination of practically all passengers is the central 5-cent zone, through fare of either 7 cents or 9 cents is collected on the first collection. Moreover, on outbound trips on lines having two 2-cent zones, the fare for both is collected at the same time.



Further particulars of the Providence city and inter-urban system of fare collection will be found in the *ELECTRIC RAILWAY JOURNAL* of July 13, pages 65 and 66.

#### HOLYOKE TWO-ZONE TICKETS

On the Holyoke Street Railway the fares are 5 cents a zone if paid in cash. If a traveler buys tickets, he can ride through into two zones for 6½ cents or 7½ cents, depending on the distance or the direction. A typical two-zone ticket is shown on page 374.

This pasteboard ticket is partially perforated so as to be torn in two easily when the fare is collected. The conductor retains one half and the passenger keeps the other, to be collected when the second zone is reached. Both parts have the same serial number. The ticket is registered only once, namely, when the first half of the ticket is collected. The conductor cancels both parts of the ticket with his punch, and at the end of his trip turns in both.

#### BAY STATE PRACTICE

The fare system of the Bay State Street Railway, as described on page 1210 of the issue of this paper for June 22, is somewhat complicated owing to the variety of fares changed, including "off-peak" tickets. In general, however, there are not more than two zones in any one city, and the plan of pay-as-you-enter inbound and pay-as-you-leave outbound, used in Pittsburgh, is followed. On the suburban lines a duplex ticket is used, the passenger retaining his half until he leaves the car.

#### "Keep the Home Wheels Turning"

IN ITS campaign for a higher fare, a rehearing on which was opened on Aug. 29, the Public Service Railway, Newark, N. J., is using the epigram "Keep the Home Wheels Turning" from the running headline of recent issues of the *ELECTRIC RAILWAY JOURNAL*. Dasher signs like that illustrated are being carried on the cars, in order to impress upon the people of New Jersey

"Keep the  
Home Wheels  
Turning"

DASHER POSTER IN USE THIS WEEK ON CARS OF  
PUBLIC SERVICE RAILWAY

the importance of supporting the local electric railway service as one means of helping to win the war.

In an address before the Newark Board of Trade, delivered on Aug. 21, Thomas N. McCarter, president Public Service Railway, used the phrase as the title of his remarks, and also used it by way of illustration. He said, in part: "The *ELECTRIC RAILWAY JOURNAL*, which is one of the official organs of the industry in

the country, in its issue of last Saturday had printed across the top of every other page in large type the epigram "Keep the Home Wheels Turning." That is the best statement of the whole problem I have seen. That is what this application is for. It isn't whether I, my brother, or any other investor in any of these enterprises, gets his money or gets his dividend in his pocket. It is whether the financial status of this outfit can be maintained so that we can "Keep the home wheels turning."

## The Competition Between Safety Car and Jitney

### Reduction of Man-Power Because of War Needs and Publicity on Financial Conditions Remove Objections to One-Man Cars

BY M. B. LAMBERT

Assistant Manager Railway Department, Westinghouse Electric & Manufacturing Company

THE safety car has come to stay. Its practicability and economy have been proved in numerous parts of the country. War conditions have contributed much to its popularity. The average citizen will admit that under present conditions it is a waste of man-power to use two able-bodied men on each street car, whereas he formerly looked upon the one-man car as a measure toward reducing costs and increasing dividends at the expense of the car rider.

The publicity that has been given to the financial conditions of the electric railways has also borne fruit. Many people now understand that the electric railways have not been coining money but, instead, have been rapidly approaching and are now on the verge of bankruptcy and must have relief.

A great number of men who have given serious thought to the electric railway problem say there are three possible consummations: (1) Financial breakdown followed by municipal or state operation. (2) Company ownership and operation regulated by public commissions, with a fair return on the investment guaranteed by the state. (3) Company ownership as at present, securing a fair return on the investment through the usual business methods of providing reasonable service at a reasonable price.

The last plan is, of course, the best if it is possible of accomplishment. The great difficulty lies in the fact that very few electric railway companies have an organization capable of conducting business publicity. It is something that cannot be accomplished in a few months. It requires a year or so of honest, straightforward publicity work with real honest effort to provide good service. Furthermore, it means that this sort of activity must be kept up if continued progress is expected.

It is also true that a great deal of publicity work must be done in order to make the second plan work out successfully. The people, as a whole, will not be content with a guaranteed return on the investment unless they believe they get a good service for the price paid.

The safety car looms up on the horizon as a solution of a part of our city transportation problems and offers an opportunity to numerous companies to provide rapid service at frequent intervals at low cost. It is no longer an experiment. It has been tried out and has shown wonderful results on a great many properties,



not only in economy but also in satisfactory operation and service to the people.

The operation of the jitneys proved conclusively that most people tolerated the discomfort of the crowded jitney because it made faster schedules and vice versa, where the one-man safety cars make faster schedules than the jitneys, the people have shown they prefer to ride on the safety cars. In other words, experience has shown that the people want fast service at frequent intervals. The introduction of the skip stop has made faster schedules possible. There remains only to provide sufficiently frequent service at a reasonably low fare to make the service attractive and pay an adequate return on the investment. With this accomplished, no further competition may be expected from jitneys and, above all, in this plan which the safety car has made possible there seems to lie a solution for many electric railway properties.

The wonderful growth in the popularity of the safety cars, with one-man operation, like most other things that have benefited humanity, is to a large extent due to a man or group of men who had the courage of their convictions.

The American Car Company had faith in Birney's car, and placed orders for large numbers for stock. The sales have exceeded all expectations, notwithstanding the general curtailments due to war conditions. The reason for this is the safety car is solving the problem on many street railway properties. The scheme is economically sound; hence, we may look more and more to safety cars in the future.

### San Francisco Buses a Costly Accommodation

TO GIVE service to outlying parts of the city, the San Francisco Municipal Railway last year purchased five White buses and rented three others, all of nineteen-passenger seating capacity. Since May two of the rented buses have been discontinued in order to reduce the losses. With eight buses, one was used as a spare; with six buses all are in service. The reduction was secured by combining Routes 3 and 4, the buses going up one street and returning down another to connect with the "K" or Twin Peaks Tunnel line. The traffic data concerning each line follows:

*Route 1*—Two buses giving free transfer to and from the "A" line for twelve-minute headway service across Golden Gate Park. Maximum ride for 5 cents, 4.8 miles in car and 2.08 miles in bus. Total 6.88 miles.

*Route 2*—One bus giving free transfer to and from the "B" line along Great Highway (ocean shore) from Cabrillo to Kirkham streets on fifteen-minute headway. Maximum ride for 5 cents, 7.06 miles in car and 1.12 miles in bus. Total 8.18 miles.

*Routes 3 and 4*—Three buses (instead of four regulars) or Ingleside and Parkside routes combined from Ocean and Phelan Avenues to Thirty-third Avenue and Tarraval Street on ten-minute headway, connecting with "K" line. Maximum ride for 5 cents 6.04 miles in car, 1.70 miles in bus. Total 7.74 miles.

The average schedule speed of the municipal cars including the congested sections is 9.4 m.p.h.; of the buses, 12.5 m.p.h. These speeds include layovers.

Routes 1 and 2 reach sections not accessible by trolley car. Routes 3 and 4, however, parallel lines of the United Railroads via the Twin Peaks tunnel. The municipal cars reach the Ingleside transfer point in thirty minutes compared with forty-nine minutes on the United

TABLE I—PASSENGER TRAFFIC CARRIED ON SAN FRANCISCO MUNICIPAL BUS LINES, APRIL, 1918

Line	5 Cents	—Tickets—		Transfers	Free	Total
		Q.M.	School			
No. 1	19,190	1	779	14,654	32	34,656
No. 2	7,579	·	116	6,649	2	14,346
Nos. 3 and 4 combined	26,273	1	595	25,182	33	52,089
						101,091

NOTE.—During April, the total traffic on line "A" was 632,664; line "B," 754,245; line "K," 165,741, a total of 1,552,650.

TABLE II—STATEMENT OF BUS LINE OPERATION, SAN FRANCISCO MUNICIPAL RAILWAY, APRIL, 1918

Receipts:	
Route No. 1	\$959.90
Route No. 2	378.95
Routes Nos. 3 and 4 combined	1,332.25
Total receipts	\$2,651.10
Repairs to buses owned, exclusive of \$749.13 for tires which are charged on mileage basis	
Conductor-chauffeur of buses owned	400.53
Garage expense of buses owned	1,172.15
Rental of buses	973.77
Conductors, chauffeurs, buses rented	747.29
	566.05
Operating loss	\$4,607.08
	\$1,955.98
Reserves:	
Depreciation (18 per cent. of receipts)	\$477.20
Compensation insurance (\$2.39 on \$1,738.20)	41.54
Total reserves	\$518.74
Gross excess of expenses over receipts exclusive of tires	\$1,727.43
Revenue Credits:	
Two quartermaster's tickets 10 cents, 1,490 school tickets \$37.25 and 46,485 local transfers, \$1,162.13	\$1,199.48
Net excess of expenses over receipts, exclusive of tires	\$527.95*
Tire Expense:	
32,645 miles at 5 cents per mile (estimated)	\$1,632.25
Net loss for April, 1918	\$2,160.20
Average net loss per diem	72.01
Bus Mileage, April, 32,645 Miles	
Receipts per bus-mile in cents	0.081
Operating expenses per bus-mile, except tires and reserves	0.118
Operating loss per bus-mile, except tires and reserves	0.037
Gross excess of expense per bus-mile, except tires and reserves	0.053
Net excess of expense per bus-mile, except tires and reserves	0.016
Net loss per bus-mile, tire expense included	*0.066

\* After crediting bus line with proportionate transfers and tickets.

Railroads. This fact, however, does not invalidate the contention that a duplication of investment could have been avoided if both interests could have agreed on a car-to-car transfer system.

The degree of necessity for the service on the different routes may be gaged by a comparison of the car and bus passengers on the linked routes. According to Table I herewith, Route 1 in April had 34,656 passengers compared with 632,664 passengers on line "A," a ratio of 0.054:1; Route 2 had 14,346 passengers compared with 754,245 passengers on line "B," a ratio of 0.019:1; Routes 3 and 4 combined, 52,089 passengers compared with 165,741 passengers on line "K," a ratio of 0.31:1. It will be seen, therefore, that the bus travel is significant only on the thinly-patronized Twin Peaks tunnel line because the latter has so many through riders. It is true that the Twin Peaks tunnel was built by local assessments, but the running expense of operation is carried by the Municipal Railway.

Table II, operating costs for April, shows that the bus receipts were only \$2,651.10. Against this were charged \$3,859.79 for operation and repairs, \$1,632.25 for tires (5 cents per mile), \$518.74 for depreciation and workmen's compensation insurance. After allowance of a credit of \$1,199.48 for tickets and transfers, the net loss for April's 32,645 miles was \$2,160.20. In other words, each of the 101,191 bus riders received a gift of 2.1 cents from the city every month aside from the fact that they were also the riders who averaged the maximum trolley haul! The net loss per bus-mile was 0.66 cent.



# Labor and the Electric Railways

**Of Three Factors in Railway Operation, Employees, Public and Investor, Employees Come First—Their Co-operation Must Be Secured and the Public Be Convinced that Good Service Demands Fair Pay**

BY BRITTON I. BUDD

President Chicago Elevated Lines and Chicago, North Shore & Milwaukee Railroad

**T**HE electric railways of the United States are today facing the most serious problems in their history. Conditions brought about by the steadily increasing costs of operation, due to the enormously advanced prices of materials and labor, with revenues limited by national, state and municipal regulating authorities, call for clear thinking and sane acting, if receiverships and industrial chaos are to be averted. Owners of electric railways must look forward, not backward. The problems confronting them must be met and solved in the light of present day knowledge and understanding, rather than by the experience of the past. Especially does this apply in dealing with labor problems, for methods which might have been applicable even ten years ago are today obsolete and out of place.

## THE EMPLOYEES, THE PUBLIC AND THE OWNERS

In the operation of electric railways there are three factors to be considered, namely, the employees, the public and the owners of the properties. Each factor is entitled to a fair return on his contribution toward the success of the enterprise, and each must be given consideration in determining what that return shall be. If one of the factors in this equation demands and receives more than its fair share, it must be at the expense of the other two factors, and this presents a condition which calls for an adjustment.

In my classification of the factors I have given the employees first place, because in many ways I feel they are the most important. If employees are reasonably well paid, if they are given the best working conditions which the character of the work will permit, they will be contented and will work and cooperate with the company. Such co-operation makes possible the best service to the public, which means a better return on its investment. If the employees and the public both are satisfied, the owners of the property are more apt to be satisfied, because operation under such conditions will be successful, assuming, of course, that revenues are sufficient to make a reasonable return to all factors.

Let us briefly consider what are the rights of each of the factors in this equation and their relations each to the other.

The National War Labor Board, in laying down certain general principles and policies to govern relations between workers and employers, has said: (1) "The right of all workers, including laborers, to a living wage, is hereby declared." (2) "In fixing wages, minimum rates of pay shall be established which will insure the subsistence of the worker and his family in health and reasonable comfort."

It will be observed that in laying down these gen-

eral principles, the War Labor Board has not considered the financial condition of the employer. The inference is plain that workers are entitled to a living wage, and that the ability of the employer to pay that wage is not the main issue.

The owners of electric railways should face the situation squarely. Demands of employees for increased wages cannot be dismissed on the plea that the company is financially unable to meet them, even though that plea is literally true. Such a plea will satisfy neither the employees nor the public and it behooves the owners of electric railways to face about and seek ways and means of increasing revenues.

## RAILWAYS ARE NOT A PHILANTHROPY

At the present time wage demands have been made on many electric railways which if granted would mean utter financial ruin, unless ways are found for increasing revenues. If the electric railways wish to be regarded as eleemosynary institutions and sell transportation at less than cost, the employees cannot be expected to engage in such philanthropic enterprises. The public should not receive goods at less than cost, at the expense of those engaged in producing such goods, and this applies to the investment made by both capital and labor.

The term "living wage," which the War Labor Board has declared each laborer entitled to, is rather a loose term and ambiguous. It would, however, be impossible for any board to define in exact terms what constitutes a living wage. We find one man supporting a family in comfort on a wage which another man similarly situated finds altogether inadequate. A great deal depends also on locality. What might be a fairly adequate wage in one part of the country may not be adequate in some other section.

## LABOR MUST BE HELD IN A COMPETITIVE MARKET

The owners of electric railways, however, need not greatly concern themselves on that point. They must be prepared to pay wages relatively as high, all things being considered, as are paid in other industries, or they will not be able to procure the labor necessary to operate their lines. Many already are experiencing difficulty in this direction and the public suffers as a result of the quality of the service. However much we may differ in opinion as to what constitutes a fair rate of pay for employees of electric railways, we can all agree, I believe, that wages that were fair in pre-war times are not fair to-day, because the purchasing power of the dollar has materially decreased. We must recognize that fact and deal with our employees accordingly.



What are the rights of the public in the matter? What attitude should the public assume toward electric railways? The public is entitled to the best service that can be given for the price paid. In this respect the public often is short-sighted as it does not fully appreciate the relation of the service to the fare. It is impossible for any public utility company to give the best service unless it is earning a fair return on its investment. In other words, the character of the service must depend upon the price paid for that service.

Generally speaking, the attitude of the public toward electric railways and other utilities is not a fair one. While demanding more and more in the way of service, the public is unwilling to pay for what it asks and expects. Any suggestion of increasing rates for transportation usually meets with public opposition, regardless of the financial condition of the company. Prices of all other necessities advance, but to-day the price of transportation on many electric lines is actually less than it was ten years ago, although the service given has steadily improved.

#### WHERE DO THE OWNERS COME IN?

The owners of electric railways are entitled to as square a deal as the other two factors in the equation. They are performing a great public service, for which many times they receive neither credit nor adequate return on their investment. Sometimes, perhaps, they are themselves to blame. Too often in the past the electric railways have taken a position of standing between the public and increased fares. They have met the demands of their employees for increased wages with the assertion that the rate of fare will not warrant any advance in wages, and they have appealed to the public to support them in that position.

This policy has never earned the good will and support of the public, while it has incurred the ill-will of the employees. The owners must adopt a policy of perfect frankness with their partners in the industry. They must first have a good case to present, as most of them have, and then they should see that it is intelligently and frankly presented. They have no right to expect their employees to accept lower wages simply because they are selling their product to the public at too low a price. Instead of flatly opposing reasonable wage demands on the part of their employees, they should bend their energies toward producing higher revenues and, by dealing frankly and openly with their employees and the public, they will have the co-operation of the former and lessen the opposition of the latter.

#### RATE ADVANCES ARE GENERALLY SLOW

We all realize that it is an extremely difficult and slow proposition for a public utility company to advance rates. The manufacturer engaged in private enterprise meets increased wages or higher costs of materials by advancing the price of his product to the consumer. The burden is easily shifted. Not so with the electric railway company. It must be able to show the various commissions and boards, charged with the regulation of rates, that the increase asked for is justifiable. It is a matter of common knowledge that in some states, boards and commissions in mak-

ing awards frequently are governed by popular sentiment rather than by the actual merits of the case. This makes it all the more necessary for public utilities to be frank and open in their relations with their employees.

Never was there a time as opportune for educational work on the part of electric railways as the present. They are absolutely essential to the successful prosecution of the war. The hundreds of thousands of employees engaged in war industries must be provided with means of transportation to and from their work. The public has grown accustomed to higher costs of every necessity, and the necessity for increasing wages is generally recognized, even if the scarcity of labor did not make such increases imperative in order to hold men in the industry.

#### ELECTRIC RAILWAYS ARE AN ESSENTIAL INDUSTRY

The importance of the electric railways in these war times is not yet fully appreciated by the public, but there is no one factor probably that is of more importance to the successful prosecution of the war than the electric railways, inasmuch as they serve practically every form of industry engaged in the manufacture of war munitions, ships, etc. In fact they are indispensable and it is most essential that their revenues be sufficient not only to enable them to maintain the best of service, but also to put in improvements and extensions to plants, shipyards, cantonments, naval stations and other war activities.

The banks, trust companies and insurance companies throughout the nation are large holders of the securities of electric railways, and conditions which would bring about depreciation of these securities would have a serious effect upon the entire financial structure of the country. Government officials realize the importance of the electric lines and have shown a disposition to deal with them fairly. This fact should be emphasized in every possible way, until the truth is forced upon the public mind. When the public is fully enlightened on the seriousness of the situation, the way will be paved for a comprehensive plan which may require national legislation to insure sufficient revenues to do justice to those who have invested their capital in electric railways and to enable the companies to perform the service which is expected of them.

In this campaign of enlightenment the employees of the companies, if fairly treated, will be found ready to co-operate. It is inexcusable to overlook the fact that the employees of the industry are a powerful influence in making public opinion. The question for the industry to determine in these critical times is how much of an effort it is willing to make to break down antagonisms that have existed too long and, in lieu thereof, to enlist the employees' help in working out the complex situation in which the companies find themselves. A way must be found to bring about this result. Although it may not always be possible to comply with all the demands which employees may make, it will be possible to go a considerable distance on the road to solving differences. Not to realize this is to miss completely the signs of the times—the entire drift of the relations between employer and employees—and the inevitable result of every controversy between the two.



## Facts Must Be Faced

### Messrs. Putnam and Doolittle Set Inquiring Journalist Aright in Regard to Operation in Cleveland

THE public does not understand. This applies both to the fundamental economics of the electric railway industry and to the detailed financial and operating facts in particular localities. Nor is this lack of knowledge confined to the so-called unthinking part of the public. Many an educated and influential citizen either does not realize or misunderstands the present serious conditions of utility operation.

A striking example of this fact is a reply that has been elicited by the open letter of Frank Putnam, of the Milwaukee Electric Railway & Light Company, to Charles E. Elmquist, president National Association of Railway & Utilities Commissioners, reproduced in the *ELECTRIC RAILWAY JOURNAL* of Aug. 17, page 298. The writer of the reply, an experienced journalist in a city in one of the Central States, takes issue with Mr. Putnam's conclusion that the condition of the electric railway industry demands federal relief, and he asks why other cities cannot do what Cleveland has done. He writes that, according to his understanding of the Cleveland situation, the fare at present is 5 cents, the wages are abnormally high, the bond interest and a sinking fund is assured and the stockholders will get 6 per cent on shares for which many paid little or nothing twenty-five to thirty years ago. If Cleveland can do all this "on terrifically watered stock" with a 5-cent fare, to say nothing of the previously existing 3-cent fare, he asks, why cannot other cities do the same?

#### HOW MR. DOOLITTLE SEES THE CLEVELAND SITUATION

In order to present the facts in the Cleveland case to the journalist and others needing similar information, both Mr. Putnam and F. W. Doolittle have prepared summaries which have been forwarded to the editor. Mr. Doolittle, in an exhaustive statement, has gone into the various pertinent phases of capitalization and operating results. He points out, for example, that in 1910 the stock of the Cleveland Railway, which was then \$26,205,600, was scaled down \$10,530,000. Of this about \$8,250,000 represented accrued depreciation, and about \$2,250,000 was a further reduction to bring the capitalization down to the amount allowed by the appraisal. Subsequent changes in capitalization have taken place under the provisions of the Talyer ordinance. The stock remains near par in spite of decreased earning power of the company, because the city in effect guarantees the 6 per cent return, and its option to purchase the stock of the company under the franchise must be exercised at 110 if at all. Moreover, owing to the scaling down above referred to, the stockholders are securing 6 per cent on only 60 per cent of the shares originally issued, or 3.6 per cent in effect on the par value of the original stock. As for wages, Cleveland is paying rates no higher than those of many other companies.

In general, the reasons why other cities have not been able to show the same results as Cleveland are outlined by Mr. Doolittle as follows:

1. The stock is not watered, but as shown by appraisal the company is under-capitalized by from \$8,000,000 to \$10,000,000, or 25 per cent to 30 per cent.
2. Interest has not been earned and large deficits are shown by the balance sheets of the company.
3. No reserves have been accumulated to insure replacement of worn out property.
4. The city's guaranty has maintained the company's credit and cheapened its cost of capital.
5. Operation is cheap in Cleveland as compared with other cities for these reasons:
  - a.—All lines terminate in the center of the city, minimizing dead and low revenue car mileage but increasing the use of transfers, for which an extra charge is made.
  - b.—The designated stop (skip-stop) system has been in effect since 1912, saving power and reducing wages per car mile because of the increased speed of cars.
  - c.—Owing to designated stops, wide streets and co-operation of traffic police, the average speed of Cleveland street cars is 2 to 3 miles per hour higher than that of street cars in other comparable cities, enabling a given number of Cleveland street cars to transport a larger number of passengers within a stated time limit than a like number of cars in other cities.
  - d.—Low accident hazard and consequent relatively small bill for injuries and accidents, owing to designated stops.
  - e.—High percentage of trail car operation with increased headways but decreased cost of platform labor.
  - f.—No line extensions unless immediately profitable.
  - g.—Minimum expense for constructing pavement, as compared with that laid on electric railway systems in other cities of Cleveland's class.
  - h.—Extensive use of short routing—that is, turning cars back before they reach the end of the line—to economize on car miles and car hours.
  - i.—Minimum tax burdens, as compared with electric railways in other cities of Cleveland's class.
  - j.—Standards of service much below those usually prescribed by regulating bodies.

All these things, Mr. Doolittle says, spell economy and represent savings growing out of co-operation between the various departments of the city government and the company.

#### MR. PUTNAM'S SUMMARY

The substantial facts of the Cleveland situation appear to Mr. Putnam to be as follows:

1. Cleveland's cheap car fares enabled those who bought them to ride for less than the actual cost of carrying them.
2. This deficit was covered partly by confiscation of a substantial percentage of actual investment, and partly by failure under city control to provide out of earnings for the replacement of worn-out and abandoned equipment.
3. This discarded equipment must now or hereafter be paid for by the Cleveland public in fares as much above normal for their period as the so-called 3-cent fare was below normal for its period. Car riders of to-day and to-morrow must make good the losses on the joy riding done by car riders of yesterday.
4. Public control has resulted in "watering" the company's scaled-down reorganization stock (by failing to replace worn out equipment), to the extent of \$2,612,000, or about the same amount that the original stock was found to be "watered." On the assumption that the guaranty of 6 per cent yearly return on the investors' shares of the scaled-down stock was meant to represent only a fair rental for the use of their money engaged in public service, and that it was not meant to apply on the purchase by the city of the stock, the city it would appear must presently restore the balance between plant value and outstanding securities in one of these ways:
  - a.—By confiscating stock of the company to the amount of \$2,612,000—requiring that it be canceled and withdrawn; or
  - b.—By authorizing car fares high enough to cover current operating interest and replacement cost, plus a percentage sufficient within a reasonable time to replace the wornout and abandoned equipment for whose replacement no provision was made during the low-fare period.

Mr. Putnam reiterates the outstanding facts in regard to the whole electric railway industry in this way:



1. Except subways financed with public credit, in one or two of the larger cities, new construction and purchase of additional equipment has ceased.

2. The railways are wearing out and for want of earnings at present fares to make repairs and replacements are declining in efficiency.

3. The failure of state regulation to assure a regular yearly fair interest return on legitimate investment, and to assure maintenance of the property in good condition, has made it next to impossible for electric railways to induce the public to invest its savings in the business—even though all new securities bear the approval of public service commissions.

4. The public, as dependent on adequate good street car service as it is on adequate good water supply for living in cities, and misled by newspapers and politicians constantly telling it about past electric railway sins instead of about present electric railway needs, is dangerously indifferent or openly hostile to every proposition to give the railways terms on which they can live and serve.

The radical newspapers, Mr. Putnam believes, are chiefly responsible for public ignorance of what is being done to their urban transportation systems, and it is up to the real newspapers to get and publish the new state of facts. In Mr. Putnam's words, this new state is:

"Yesterday in the electric railway business was the day of the franchise sellers and buyers, security promoters and sellers.

"To-day is the day of the trained engineers, trying to make \$1 of street car earnings do the work of \$2, and slowly learning how to get the needs of the business across to the public.

"To-morrow is either to be the day of the merchant in this business, selling good service at a fair price with popular satisfaction by modern merchandising methods, or it is to be the day of municipal or of state operation under either public ownership or management by trustees in the public interest.

"Whatever is to come to-morrow, communities that lynch their street car systems to-day might as wisely dynamite their water supply systems."

## An Effective Home-Made Track Grinder

BY C. L. CARTER

Superintendent and Chief Engineer Charlottesville & Albemarle Railway, Charlottesville, Va.

A TRACK GRINDER made from old material in the shops of the Charlottesville & Albemarle Railway



TRACK GRINDER READY FOR SERVICE

has proved of great assistance in making track repairs. This consists of a framework of old rails, to connect the wheels and axles, on which is mounted a 5-hp. 500-volt motor. The motor is belted to the emery-wheel shaft. A gear is mounted on one of the wheels which meshes with a pinion on a shaft extending across the frame of the grinder. A steering wheel from an old automobile is attached to the end of this shaft and by turning this the girder is moved back and forth over the joint. A tool box is mounted on the opposite end of the grinder and under this a circuit of five lamps is installed to illuminate the joint when the work is being done at night. With this grinder and an Indianapolis welder, four men can, in a single night, build up and grind fifty joints, some of which are more than  $\frac{1}{4}$  in. low.

## Chicago Surface Lines Print 4,000,000 Transfers a Day

Printing Department of This System Has Recently Been Enlarged and New Machinery Installed to Meet the Increasing Requirements

THE Chicago Surface Lines handle more transfer passengers than any other street railway system in the world. The task of providing transfers which confronts the management is, therefore, no small one. Adequately to meet the growing demand for transfers a new Meisel rotary printing press was added recently to the equipment at the South Shore shops. The new press even when running below normal speed, 326 r.p.m. shaft speed, is more than able to take care of the transfer requirements. At low speed it turns out 132 sheets per minute, or 7920 per hour. The next higher speed calls for 8400 sheets per hour. Each sheet has the impressions for ninety-six transfers, and ten sheets are accumulated on the cylinder, delivered at once and jogged into place. The present output is at the rate of 43,000 sheets, or 4,128,000 transfers per day.

The general plan of the printing room, which is about 38 ft. long and 46 ft. wide, is indicated by the accompanying engraving giving a bird's-eye view of the plant.

### FROM THE ROLL TO THE CAR STATION TRANSFER SUPPLY

The system of providing transfers for the Surface Lines works out about as follows: Rolls of paper, 31 in. wide, of four different colors are always kept on hand, the average supply running from 300,000 lb. to 400,000 lb. Paper is fed into the press from a roll, and while passing through it receives four different impressions—back, front, serial number and dating heads. As it comes out it is cut into sheets of ninety-six transfers each, which are jogged into place. When 100 sheets are in place they are taken off by the operator.

Next the sheets, 500 at once, are cut into six strips of sixteen transfers each by means of a Seybold cutting machine. Each hundred sheets of sixteen transfers are then fed into a new Christensen stitching machine, which turns them out in stitched packages at the rate of 162 books per minute, or five times the rate of the machine formerly used. Again these strips are put on the Seybold machine and cut into single books of 100 transfers each. The transfers are now ready for sorting and distribution.





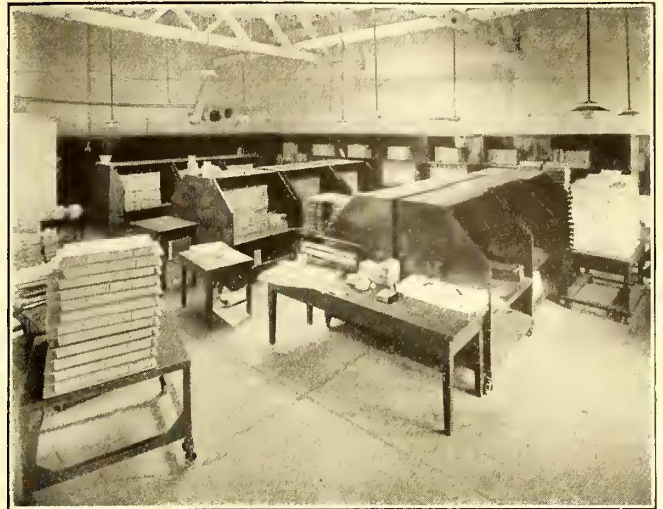
GENERAL VIEW OF THE TRANSFER PRINTING ROOM

Carried into another room, the transfers are put in bundles of ten books each with rubber bands. They are then wrapped in canvas packages to meet the requirements of each station. Printing is usually twenty days ahead of the date of issue, and the surplus supply which is not required at once at the stations is kept in fire-proof steel bins in the shipping room. Transfers are sent to the stations about two weeks ahead of the date on which they are to be used. The station requirements call for 3,560,000 transfers daily, and these estimates stand for six months, the figures being different of course for Saturdays and Sundays.

#### OPERATING CAPACITY NOW AMPLE FOR SOME TIME TO COME

The new press has been in operation only a short time, and it has never been necessary to work it to full capacity. The old transfer press of the Kidder pattern, is kept ready for emergency use. This press has seen considerable service since it was installed in 1907. It turns out transfers at the rate of 7000 sheets per hour, there being fifty-five transfers to a sheet and only one sheet being cut at a time.

For some time the printing department has had trouble due to static electricity in the heavy filled paper



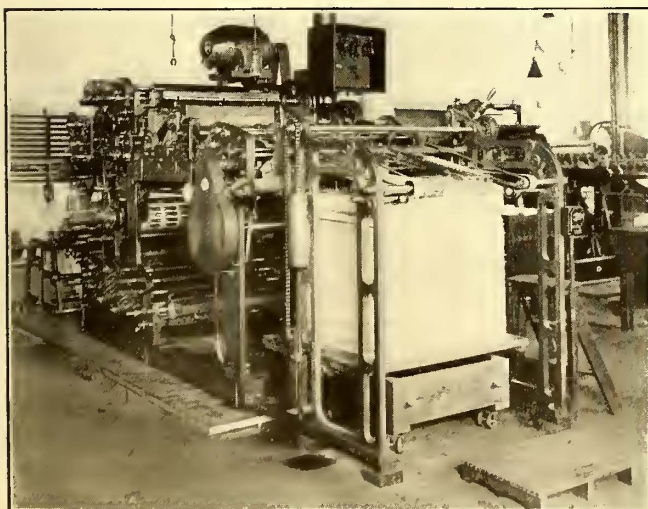
INTERIOR OF THE SORTING AND PACKING ROOM

used for transfer printing. When a change was made in the quality of paper the trouble was eliminated, and there has since been a noticeable economy in the cost of manufacture.

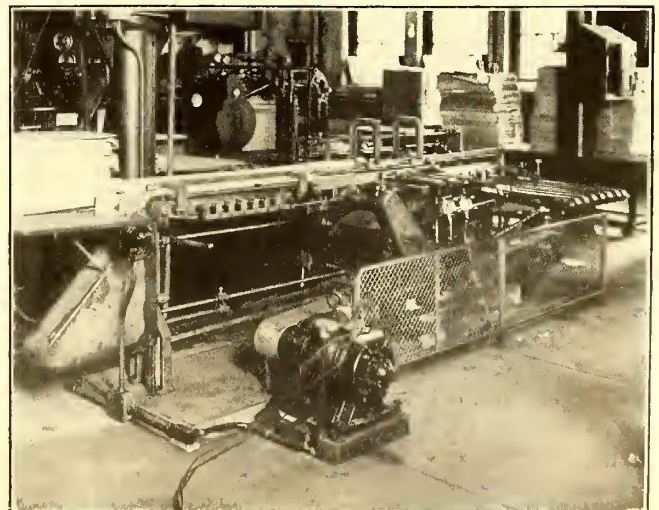
#### ONLY TWO TYPES OF TRANSFER USED

While the Chicago Surface Lines operate about 1000 miles of track and 172 different routes, the form of transfer which has been in use since 1914 has proved entirely satisfactory. There are only two types of transfers, one for north and south lines and the other for east and west lines. The former has the names of forty-four routes and the latter fifty-one routes. These ninety-five names are made to serve the purpose of the total of 172 routes by providing additional spaces for punch marks worded "Thro L," "Short L," "Downtown" and "Extension."

Thus cars on a Halsted Street line may be routed either "short" or "through" or "downtown," and by punching one of these spaces there is no need of printing the name "Halsted" so frequently. The color system is also used in addition to the word "north," "south," "east" or "west," so that a conductor may more readily determine the direction of travel of the passenger who hands him a transfer.



NEW ROTARY PRINTING PRESS INSTALLED



STITCHING MACHINE IN THE PRINTING ROOM



## LETTERS TO THE EDITORS

### Indiana Order on Freight Rates Contains Inconsistencies

Aug. 26, 1917.

TO THE EDITORS:

In the recent order issued by the Public Service Commission of Indiana granting increased freight rates to the various electric lines and abstracted on page 260 of your issue of Aug. 10, there are a number of peculiarities.

It will be remembered that when the Interstate Commerce Commission was considering the 15 per cent increase on steam railroads, considerable time was given to a study of the relation between the different classes, and the best steam railroad talent in the country was called into conference. As a result of this conference, which represented more than fifty years of experience of the steam railroads, the relation between class rates was established, it is understood, by Examiner Disque. Nevertheless the Indiana Commission says that its scale "is better balanced, better graduated and more logical than the steam railroad scale."

A comparison of the rates, which on the electric companies is based upon groups of 4 miles and on the steam railroads on groups of 5 miles, will show discrepancies as follows:

Miles	First Class	Second Class	Third Class	Fourth Class	Fifth Class	Sixth Class
10 Steam.....	25	21.5	17	12.5	9	7
10 Electric..	23.5	20	16.5	13	9.5	7

It will be observed that there is a differential against the steam lines in all of the classes except the fourth and fifth classes. Most of the commodities handled are of the third and fifth class. For distances of ten miles or less from a large shipping center, most of the shipments, independent of the rate, are handled either by wagon or truck. Apparently the commission considered the electric line as a peddler for jobbing houses within a short radius. This will be demonstrated later.

Miles	First Class	Second Class	Third Class	Fourth Class	Fifth Class	Sixth Class
80 Steam.....	40	34	27	20	14	11.5
80 Electric..	40.5	35	28.5	22.5	16	12

In this scale, which covers a very common haul, for the electric lines, local to some and inter-line with others, it will be noticed that the differential is in favor of the steam lines.

Again on interstate business, the Indiana scale conflicts with intrastate traffic. For example, the class rates from Louisville to Indianapolis, 117 miles, will be as follows: 46.5, 39.5, 31.5, 23, 16.5, 13. At the same time, the class rates from Jeffersonville to Indianapolis, 114 miles, will be 49.5, 42.5, 34.5, 27, 20, 15. In other words, the intermediate rate intrastate will be higher than the through rate interstate.

The city of Fort Wayne received a good many shipments from Indianapolis. The class rates from Indianapolis to Fort Wayne, via the electric line, 124 miles, will be as follows: 51.5, 44.5, 36, 28.5, 20.5, 15.5 as against the steam railroad rates of 47.5, 40, 32, 24, 17, 13. This will enable Toledo, Ohio, on account of

interstate rates to enter the Fort Wayne field on the basis of the following rates via steam lines, 44.5, 37.5, 30, 22.5, 15.5, 12.5, or using the basis of a longer haul via electric line and using the electric line mileage of 137 miles the rates will be 49, 41.5, 32.5, 24.5, 17, 14. Again the class rates from Chicago to Fort Wayne, a distance of 147 miles, 50.5, 43, 34, 25.5, 17.5, 14.5, are lower than the electric line rates from Indianapolis to Fort Wayne. This is true to a greater extent between Indianapolis and Kendallville and between Indianapolis and South Bend.

It will be noticed that wherever the differential is given in favor of the electric lines it is on the higher classes, although it is a well-known fact that the shipments second class and higher form a very small percentage of the total tonnage handled by either steam or electric lines. The heavy tonnage, particularly of the electric lines is largely confined to the third, fourth and fifth classes which, under this order, are usually higher than those of the steam lines.

Long-haul freight traffic by the electric railways is penalized under this order, while the short-haul traffic out of commercial centers is divided between the electric lines and the trucking companies.

During the present war conditions the effort should be made to have the electric lines relieve steam lines of a great deal of the l. c. l. traffic to short-haul points, that is to say, "short haul" from the steam railroad point of view. The electric line has its place in the field of transportation, and if placed upon the same basis as the steam line it can relieve the steam lines of a vast amount of l. c. l. shipments, thereby allowing the steam railway equipment to be used in moving c. l. shipments of both commercial and government commodities.

The service performed by the electric line is just as valuable to the shipper and consignee for short haul distances as that of the steam railroad, and for the longer haul, even up to 200 miles, it is worth more to the public than the steam on account of the frequency of service and the short time consumed between terminal points as compared with the steam lines. The electric lines did not ask for an increase above the steam line rates but would have been satisfied with the same general increase.

From the shipper's standpoint, to have two separate bases for rates, one steam and the other electric, is confusing. No shipper having a shipment, consisting of say 1500 lb., of which 200 lb. is first and second class and the balance of the lower classes, will separate such a shipment and give the 200 lb. to the electric line on account of the differential in high-class rates and the balance to the steam line where the other classes are lower. The entire shipment will go to the steam line. To any traffic man, either electric or commercial, the inconsistencies between the rates are very apparent.

TRAFFIC SUPERINTENDENT.

Working through the Priorities Board, the War Industries Board is formulating a new list of preferred industries which will be almost twice as long as that issued last April. The list is maintained by a system of priority in determining the use of the six basic elements of industry, which are material, facilities, fuel, transportation, labor and capital.



# News of the Electric Railways

TRAFFIC AND TRANSPORTATION

FINANCIAL AND CORPORATE · PERSONAL MENTION · CONSTRUCTION NEWS

## Municipal Ownership Offer

Inability to Agree on Advance in Fares Results in Offer from City to the Seattle Company

The transportation problem in Seattle, Wash., was given a new twist recently when Mayor Ole Hanson, in a letter to A. W. Leonard, president of the Puget Sound Traction, Light & Power Company, offering to take over the traction system and lines of the two private concerns operating in Seattle and run them under municipal operation.

The offer was made by Mayor Hanson and the City Council, following conferences held between city and traction officials, in which it became evident that no basis of agreement could be reached on the proposition of increasing railway revenues sufficiently to meet the requirements of the company in taking care of trainmen's increases. The City Council expressed itself as irrevocably opposed to an increase in fares, and President Leonard asserts that no other means of increasing revenues is practical.

The report of Thomas F. Murphine, superintendent of public utilities, who has completed an investigation of the books of the Puget Sound Company, recommends immediate improvement of railway service in Seattle, but opposes higher fares to meet added expenses.

### THREE PLANS SUGGESTED

To increase the company's revenue, the report suggests three possible plans:

1. Increase the fare to 7 cents. This would add \$1,282,279 to the revenue annually.
2. Increase the fare to 6 cents with 1 cent additional for transfers. This would increase the revenue approximately \$1,000,000.
3. Reduce the cost by waiver by the city temporarily of the franchise requirements calling for the 2 per cent gross earnings tax, \$400,000 for paving, and the charge for use of bridges built and maintained by the city, and add to the revenue by economies in management, such economies to include skip stops and one-man cars.

The third plan is strongly recommended by Superintendent Murphine for adoption. It is this plan that the Council as a whole favors.

President Leonard of the company argues that the plan is impracticable and purely theoretical, and that only a substantial increase in fares would enable the company to meet the new wage scale and provide additional service demanded by the city. He placed the rate of fare which he thought the com-

pany should be allowed to charge at 6 cents, with an additional cent for each transfer.

When it became evident that no agreement could be reached between city and company officials, the Mayor and Council made the offer to the company to lease the lines during the period of the war.

President Leonard declined to comment on the lease proposition, other than to say: "It has possibilities." It is expected, however, that F. S. Pratt, chairman of the board of directors of the company, who will arrive in Seattle shortly, will submit the matter to the board of directors.

A serious phase of the situation resulting from the failure of the city and company officials to agree upon the rate of fare to be charged, is the effect upon the wage agreements which had been entered into between the company and its employees. The new wage scale, under its original terms, was to have been ratified by Aug. 20, or the question of wages would be submitted to the War Labor Board for adjudication. Mayor Hanson has asked the local branch of the Amalgamated Association to delay action for another week, pending action of the companies on the proposition from the city.

Mayor Hanson and Mr. Murphine favor advanced wages to trainmen, and recommend the adoption of a flat scale for the municipal street car men of 62½ cents an hour, 2½ cents more than the maximum to be paid by the traction company.

## Labor Board on Individual Contracts

Frank P. Walsh, joint chairman of the National War Labor Board, and Frederick N. Judson, alternate for Joint Chairman William Howard Taft, have issued the following statement with regard to the board's decision on Aug. 21, in the case of the Smith & Wesson Company, Springfield, Mass.:

"The National War Labor Board, in its recent ruling in this case, did not pass upon the validity of the individual contracts of the company with its employees, but said that whether such contracts were valid or not, a further making of them should be discontinued during the continuance of the war under the principles of the board, in the interest of industrial peace. The board also recommended for the same reason that the company should reinstate the employees who had been discharged for violation of the contracts, whether the discharge was legally valid or not under the terms of the contracts."

## Denver Wage Negotiations

Company's Attitude on Wages and Unionization Stated Frankly to the Public

The answer of the Denver (Col.) Tramway to the demand of employees for a wage increase averaging 22 cents and hour, and totaling \$882,596 a year, is an offer of an increase of 6 cents an hour, totaling \$240,708 a year.

At the end of a conference between F. W. Hild, general manager of the company, and a committee of the employees, no agreement being reached, the committee announced that if the company agreed the union would be willing to take the matter before the War Labor Board at Washington. The union would not consent to lay its case before the Colorado Utilities Commission.

### PRESENT WAGES ADEQUATE

The reply of the tramway to the wage schedule proposed by the new association asserts that the wage increases announced by the company on July 16, to go into effect from Aug. 15, are just and sufficient, because on the whole they parallel the increase in the cost of living.

The accompanying table shows the scale of wages in cents per hour in effect in 1914, the scale now granted by the tramway, and the scale demanded by the trainmen:

TRAMWAY TRAINMEN'S WAGE SCHEDULE PER HOUR

Years of Service	1914 Scale	1918 Scale (Aug. 15)	Per Cent Increase Granted	Scale Asked by Trainmen	Per Cent Increase Demanded
First	24	34	41.8	50	108
Second	26½	36½	37.7	52½	98
Third, fourth and Fifth	28	38	35	55	96.4
Sixth and following	30	40	33½	55	83.3

The demand of the union for a closed shop contract is answered by the tramway with the statement that the policy of the company is exactly the same as the policy of the government as expressed by President Wilson and as laid down by the War Labor Board in its statement of April 8.

The wage question is discussed at length in a pamphlet addressed to all the employees of the company on Aug. 13. The matter was considered of such vital concern that copies were distributed for the information of the public.



## Cincinnati Settlement Ordinance Passed

Service-at-Cost an Outstanding Feature of New Grant, Which Will Expire in 1931

The revised railway ordinance, upon which a committee has been at work for some time, was passed by the Council of Cincinnati, Ohio, on Aug. 23 by a vote of twenty-five to three. It provides for a sliding scale of fare based upon the cost of operation, with 5 cents as the initial rate. Mayor Galvin had already pledged his signature to the ordinance, which is to become operative on Sept. 23, unless referendum proceedings should block it. The grant will expire on April 27, 1931, the end of the revision period.

### FEW CHANGES MADE

Of the 167 amendments adopted by the general committee since the submission of the draft by the sub-committee on Aug. 9, all but a few related to phraseology and other minor matters. In the main, the provisions are as established by the sub-committee.

The most important amendment accepted by both the company and the committee substituted an initial fare of 5 cents for one of 6 cents, as provided in the original draft. A long discussion of this point took place before the committee on the day previous to the passage of the ordinance and the company agreed to it in order to give it a test that will satisfy the public. At the same time Walter A. Draper, vice-president, stated that the officers felt sure that it would not yield an income sufficient to cover the expenses.

The 5-cent rate will continue three months, after which readjustment will be made every two months, with one month additional each time for putting the new rate into operation. This really means that the periods of change will be three months apart. At the last committee meeting the citizens' committee seems to have changed front and asked for a flat rate of 5 cents for the entire revision period of thirteen years, with a 6-cent rate during the period of the war and one year thereafter. This was probably due to a realization that the rate might run higher than 5 cents at other times than during the war.

The change in rate in the fare schedule is one-half of 1 cent at a time. For instance, if, at the end of the first three months, it is found that there is a deficit, the rate will be advanced to 5½ cents. Should the same condition prevail two months thereafter, the 6-cent rate will go into effect at the expiration of the third month. Likewise, the fare will be reduced automatically one-half of 1 cent each time, when it is shown that an unnecessary surplus is accumulating.

### CLEVELAND FARE PLAN COPIED

For regulating the fare, a plan has been adopted resembling that in effect at Cleveland. A reserve fund of \$400,000 will be provided, into which will be paid all surplus remaining after

the payment of operating expenses, taxes and returns on investment and for rentals. When this fund shall have reached \$650,000, the fare is to be reduced to the next lower rate. It is provided that when the income is insufficient to meet the expenses and payments mentioned, the deficiency shall be made up from the reserve fund. When the fund reaches a minimum of \$250,000, the fare shall be advanced to the next higher rate. The company must provide the minimum of \$250,000 and the amount must remain above this to preserve the initial rate.

An amendment made to the original draft at the last meeting of the committee gives to the city complete control of the re-routing of cars and the construction of extensions.

### TERMS FOR INTERURBAN OPERATION

All of the principal provisions of the loop lease ordinance passed last year were embodied in this ordinance, except those which were specifically set aside by the Supreme Court.

The company is authorized to carry freight and express over its tracks during non-rush hours. The receipts from this source are to be used for the reduction of the passenger rate.

Provision is made for the operation of interurban cars over the company's tracks on terms to be agreed upon by the companies interested. If an interurban company should not be satisfied with the terms demanded, it may appeal to the city and the city's order shall be enforceable. The company is also required to make track connections with any rapid transit or underground railway that may be constructed by the city.

The company objected to the provision which requires it to make out an annual budget subject to the approval of the Director of Street Railroads. Supplemental budgets may be made out to take care of emergencies.

### INCENTIVE TO LOWER FARES

As an incentive to lower fares, when the rate of fare is 5 cents or less, 55 per cent of the surplus gross receipts is to be paid to the reserve fund and 45 per cent to the company. When the rate is 5½ cents, 70 per cent is to go to the reserve fund and 30 per cent to the company. When it is 6 cents, 80 per cent will go to the reserve fund and 20 per cent to the company and when the rate is above 6 cents, all the surplus receipts are to be paid into the reserve fund.

The other provisions of the ordinance remain substantially as summarized in the ELECTRIC RAILWAY JOURNAL for Aug. 17, page 302.

The sub-committee which framed the original revision of the ordinance consisted of the following: Director of Street Railroads W. C. Culkins, City

Solicitor Saul Zielonka, Assistant City Solicitor Dennis J. Ryan, Councilman Cliff E. Martin, James A. Wilson, member of the Mayor's Advisory Board, and Charles A. Groom, attorney for the Cincinnati Traction Company.

The general committee which conducted the hearings and recommended the ordinance for passage included Councilmen George J. Schlichte, Michael Mullen, O. K. Jones, Cliff E. Martin and John Burkhauser, comprising the Council committee on street railroads, and James A. Wilson, James P. Orr, C. H. M. Atkins, G. M. Sherz and Walter J. Friedlander, making up the Mayor's advisory committee.

It will require a petition with the names of 10,000 voters to bring the ordinance to a referendum vote.

## Chicago Measure Repassed

The Chicago traction ordinance, passed by the City Council on Aug. 14, was again approved by the same body on Aug. 22, after Mayor Thompson had vetoed the measure and after States Attorney Hoyne had turned the matter over to the grand jury to investigate charges of corruption in connection with its passage. The vote of fifty-one to nineteen, a gain of three supporters, showed how the Aldermen were impressed by the action of the Mayor and the State's Attorney. Politics was said to be the basis for opposition on the part of both these officials. The latest reports from the grand jury were to the effect that no basis for criminal action had been found.

Hardly had the franchise been passed on Aug. 14 when the States Attorney sprung his charges of bribery and brought them to the attention of the grand jury. Aldermen who had voted against the measure, as well as several real estate dealers, were subpoenaed and there were many stories printed about money having been promised for votes. There was no mention of company officials in this connection. The newspapers did not take the charges seriously, and it was suggested that the State's Attorney had taken this step to "steal the thunder" of Mayor Thompson, who is a candidate for United States Senator and was known to be opposed to the ordinance.

Even when the Council was about to convene on Aug. 22 to listen to the Mayor's veto message, the State's Attorney had his deputies around the city hall serving subpoenas. The Mayor's message was bitter in condemnation of the ordinance. When it had been presented the Aldermen debated for five hours and the count of votes then showed an overwhelming majority in favor of submitting the measure to popular referendum.

While the Council's approval does nothing more than give the people a chance to vote on the measure, it is likely that politics will play a big part in its consideration during the next few months. The popular vote will take place on Nov. 5.



## Nation to Control Power Resources

### Proposed Bill Gives President the Authority to Build or Use Stations or Energy to Meet the Paramount National Interest

T. W. Sims, chairman of the House committee on interstate and foreign commerce, has introduced in the House of Representatives a bill to provide further for the national security and defense, and for the more effective prosecution of the war, by furnishing means for the better utilization of the existing sources of electrical and mechanical power and for the development of new sources of such power. The bill provides \$150,000 for administrative expenses and \$200,000,000 for the purchase and building of power plants.

The proposed legislation is to be known as the emergency power act. It is not to be confused with the water power bill now pending in the House of Representatives. It will not be considered in connection with that bill, which is already on the floor of the House, while the emergency power act has just been referred to the committee.

In making the bill public, Mr. Sims issued a statement in part as follows:

We are facing a power shortage which is and for some time past has been acute and is hampering our progress on war production. So this measure authorizes the President to erect power stations near the coal mines and at other points where he may deem them necessary, or to extend financial aid to persons or corporations about to do so, and therefore desiring to secure results of tremendous, immediate and inestimable value to America. It is considered necessary by representatives of the administration, by representatives of the great power companies and by economists, who attacked the problem from various view points, and is indorsed by all of them.

The plans are to confer upon the President all necessary power to deal with the urgent power situation properly and effectively and to place at his disposal sufficient funds with which to assure adequate operation. The bill concerns:

1. Increased production of power available for war industries and shipyards.
2. Economy in the use of fuel.
3. Reduction in the railroad freight load, especially in the fuel load.
4. Increased production of metallurgical coke, toluol, ammoniacal liquor, all recovered from coal.

The greatest immediate need is perhaps to give the munition factories and shipyards additional power, which cannot be supplied by the existing supply companies with the most economical and efficient means of producing power, and to decrease the amount of fuel to be transported by the railroads and in turn make possible an early electrification of congested railway lines, which Director General McAdoo prepared for only a few days ago.

In addition to our war needs there is a wide spread demand for increased production and adequate distribution of fuel, light, heat and power for city, rural communities and industries, which will continue to increase after the war when the country will return to normal conditions and can and will compete for the trade of the world.

The plan adopted to solve any one of those problems should primarily include conservation of transportation and increased production of coal products and power. The appropriation required for all these is provided in the bill just introduced.

The bill grants sweeping authority to the President to construct power plants, to install and lease additional machinery in existing private plants, to make advances for expanding private plants, to acquire or lease private plants or to commandeer the power output. Provision is made for repayment of gov-

ernment advances and for the return of private property at the President's will.

The bill includes penalties of imprisonment or fine or both for any who knowingly neglect or refuse to comply with any order or requisition made by the President or any officer, agent or agency designated or created under the act.

The proposed act has the backing of the administration. The bill was drawn three months ago by the War Industries Board after consultation with J. B. McCall of Philadelphia, P. H. Gadsden and E. K. Hall. It was submitted to several public utility companies at the instance of different departments of the federal government.

At hearings beginning on Aug. 23 Secretary of War Baker made a general statement to express, after conversation with President Wilson, the attitude that should be taken by Congress toward an increase of power facilities to assist in winning the war. Secretary Baker said that there is existing power to take over plants and operate them on government account, and the War Department has taken over some and is operating them.

In his opinion, however, this is not the time to settle the great policy of federal ownership. What is wanted now is to get the power. He thought that in passing legislation of this sort the question should be left wide open so that the succeeding Congresses will be free to determine the great peace policy when the time comes for them to turn their attention to it.

In regard to the basis upon which utilities might repay government loans, Secretary Baker said:

"We ought not to jump at an estimate of the difference between peacetime value and war-time costs, but ought to make an arrangement by which the government will aid in the financing as far as may be necessary and allow the exact amount of the government's contribution to be determined after the war is over and things have returned to normal by an appraisal of the value of the plants to the company, and let the government then pay the difference between the appraised value and the cost during war times."

#### \$200,000,000 WILL BE NEEDED

Lieut. W. W. Stanley, executive assistant to Frederick Darlington, chief of the power section, War Industries Board, testified that in the Philadelphia, Chester and adjacent district there will be required during this year and next year about 120,000 hp. additional, at an estimated cost of \$14,500,000. New Jersey will require at least 40,000 hp., estimated to cost \$5,500,000. The Pittsburgh District will need 440,000 additional hp., at an estimated cost of

\$35,000,000. Baltimore, Lancaster and the territory between will need 53,000 hp. more, at an estimated cost of \$3,942,000. The Pennsylvania anthracite region needs 53,000 kw., involving an estimated cost of \$8,000,000.

Seventy of the larger New England plants, out of a total of about 260, will need 75,000 hp., additional, and the cost is estimated at \$14,625,000. In the Southern States the additional power required for 1918 and 1919 will be 135,000 hp. It will cost approximately \$15,000,000. A miscellaneous group of smaller power systems in the Eastern and Middle West States will need about 250,000 hp., at an estimated cost of \$31,250,000. The Pacific group is short of power, owing principally to the increase in shipbuilding on the Pacific Coast, and a preliminary estimate of desirable expenditure for this year and next year is not less than \$10,000,000.

The total figures show a present installation of about 3,716,210 hp., and 1,233,300 hp. more are required at a total cost of \$138,427,000. Lieutenant Stanley said that it is not intended that these figures shall be final. It cannot be predicted in power what the increase of the army to 5,000,000 men will mean. These figures do not make allowances for that increase. An estimated expenditure of \$200,000,000, however, is not too large by any means, because work all over the country will have to be started this fall and next winter and next spring, as soon as weather conditions are considered favorable, to get the plants built in time to pick up the load that will come on as the army and navy contracts are fulfilled.

Bernard M. Baruch, chairman of the War Industries Board, stated that the board feels not only that it should help work out the war program, but that it should look after the necessary and vital civilian needs—that is, the heating, lighting and transportation necessary in order that the populace back of the army may live in ordinary comfort.

In speaking of the coal situation Mr. Baruch declared that the real reason why the emergency power legislation is wanted is the immediate need of power in the quickest way to get it, and he believes that the cheapest way to get it and the only way to get it is as suggested by this bill.

#### Relief Plan Impracticable

F. I. Fuller, of the Portland Railway, Light & Power Company, Portland, Ore., has advised the City Council that the plan of operating city railway cars over the lines of the Southern Pacific Company, to serve the shipyards, is impracticable. He asserts that there are no cars available in the equipment of either company, and in addition numerous switches and side tracks would have to be built for this service, as there is now only a single-track railway past these industries.



## News Notes

**Fire Destroys Power Plant.**—The power plant of the Rock Island Southern Railroad at Cameron, Ill., was destroyed by fire recently. The entire equipment of the building, as well as several cars, was burned. Arrangements have been made with the Illinois Traction System to secure energy from Galesburg for a short time.

**Public Opinion in Favor of Mr. Cameron.**—Although more than a month has passed, no return has been made on the indictment charging Bruce Cameron, superintendent of transportation of the United Railways, St. Louis, Mo., with instigating the theft of referendum petitions, as noted in the *ELECTRIC RAILWAY JOURNAL* of July 20. Indeed, accountants employed by Circuit Attorney McDaniels to investigate the case have reported themselves unable to find payments alleged by one Jackson, who committed the theft and upon whose charges the indictment was drawn. Public opinion is growing that Jackson's story was a product of the imagination.

**Agreement on Working Hours.**—An agreement between the United Railways, St. Louis, Mo., and the union of its employees regarding the working hours for the men became effective on Aug. 15 according to Anthony O. Piant, president of the union. By terms of the agreement all runs are to be ten hours, or as near as conditions will permit. A 25 per cent bonus is to be paid to regulars for overtime. Car crews who work five hours or less will receive pay for the full five hours. Those working more than five hours will be paid for eight hours. Regular crews will be paid a 25 per cent bonus over platform time for single trips. Motormen will be paid 10 cents for each bundle of newspapers which they handle.

**Electrification at San Francisco.**—Electrification of the Belt Line Railroad in San Francisco, Cal., has been decided upon by the State Board of Harbor Commissioners under whose jurisdiction the line operates. The Belt Line runs along the waterfront, connecting the various piers with the several railroads that enter San Francisco. The decision to electrify was primarily the result of the high cost and the uncertain delivery of additional steam equipment which is now needed. It is recognized, however, that electrification will improve the terminal facilities and decrease fire hazard. While trolleys and feeder lines are being strung, it has been deemed advisable to provide also for electric service on the piers so that labor saving devices, which may be installed later, can be readily accommodated.

**Board of Control Reports on Kansas City Railways.**—The annual report of Robert P. Woods, city member of the Board of Control of the Kansas City (Mo.) Railways, has been issued for the fourth year, ended July 7, 1918. The report contains 241 typewritten pages, 8 in. x 11 in., including many tables and several illustrations. It is bound in cloth boards. The introduction is a brief résumé of the events of the year, and the remainder of the report is divided into chapters on accounting, way and structures, transportation, equipment and power, electrical distribution and substations, summary of contents of previous reports and several appendages. Some of the more important subjects covered are a special financial report with the budget for 1918. The history of the skip-stop, data on the 6-cent fare case, a report of the increased power rate case between the railways and the light company, and a history of the various labor troubles which have occurred during the year.

**Temporary Wage Increase at Holyoke.**—The Massachusetts State Board of Conciliation and Arbitration has awarded a temporary increase of 6 cents an hour to employees of the Holyoke Street Railway, covering the period from June 14 to Oct. 1, 1918, when a new agreement will be made. The following wages now apply: First six months, 35 cents; one year, 36 cents; two years, 37 cents; three years, 39 cents; four years, 41 cents an hour. The carmen's petition for another increase after Oct. 1 will be settled on the basis of initial periods in the first year of three and nine months, with 41 cents an hour as the minimum rate for all who have worked more than one year. The present decision of the State board awards linemen, shop and carhouse employees and truckmen 8 cents an hour increase over the rate of wages in effect on Sept. 17, 1916. The wages of employees who have by agreement received an increase of 8 cents an hour since the foregoing date are not to be reduced.

**Government Needs Thousands of Draftsmen for War Work.**—The vast activities of the government in construction and manufacture in connection with the war program necessitate the employment of literally thousands of additional draftsmen of various kinds. The United States Civil Service Commission, whose duty it is to recruit these civilian positions, announces vacancies in large numbers of drafting positions. The filing of these positions is urgently necessary, as they have a direct connection with the war organization. Applicants will not be required to report at any place for examination, the ratings being based upon the applicant's education, training, experience, etc., as shown by the application and corroborative evidence. Full information and application blanks may be obtained by communicating with the United States Civil Service Commission, Washington, D. C., or with

the secretary of the board of civil service examiners at Boston, New York, Philadelphia, Atlanta, Cincinnati, Chicago, St. Paul, St. Louis, New Orleans, Seattle or San Francisco.

**Emergency Railway Lease Arranged.**—The Board of Public Utility Commissioners of New Jersey has approved the proposition of the Emergency Fleet Railway, a part of the United States Emergency Fleet Corporation, to lease a war emergency trolley line from Gloucester City to Newton Creek, in Camden County, N. J., to the Public Service Railway for the period of the war and six months after the war. The line will be built and operated by the Public Service Railway for the Emergency Fleet Railway, and the Public Service Railway is to pay annually 5 per cent of the cost of the road as rental to the leasing company. At the close of the war the Public Service Railway will lease the line for 75 per cent of its cost. This line has been found necessary by the Emergency Fleet Corporation to provide transportation facilities for workers in the shipyards of the New York Shipbuilding Company at Camden and the Pusey & Jones yards in Gloucester City. The cost of the road will be about \$215,947. The Emergency Fleet Railway was recently incorporated.

## Program of Meeting

### Safety Congress at St. Louis This Year

One hundred and seventy-four speakers are scheduled to address the Sixth Annual Safety Congress, which will be held in the Hotel Statler, St. Louis, Mo., from Sept. 16 to 20 inclusive. President Wilson will give a five-minute talk by telephone from Washington, Charles M. Schwab will speak on "The Democratization of Industry," Secretary Franklin K. Lane will discuss "Safety as an Asset in Winning the War," and many other men of national reputation will appear on the program.

The electric railway section will meet on Sept. 19, at 9.30 a. m.

The program is as follows:

Reports of officers and committees. Addresses: "Getting Results: Education vs. Discipline," by C. G. Rice, Pittsburgh Railways; "How the Various Efforts to Promote Safety in a Community Can Be Co-ordinated," by V. J. Waltz, Toledo Railways & Light Company; "The Small Company and Intensive Training," speaker to be announced; "The Mission of the Municipal Publicity Expert," by D. E. Parsons, East St. Louis & Suburban Railway; "The Conservation of Humanity and Prevention of Accidents by Traffic Survey," by R. N. Hemming, Fort Wayne & Northern Indiana Traction Company.

The officers of the electric railway section this year are: Chairman, Julien H. Harvey, Director Public Safety Campaign, Rochester, N. Y.; vice-chairman, S. W. Baldwin, The Connecticut Company; secretary, J. C. Davidson, Denver Tramways.



# Financial and Corporate

## Appeals to Put Work Off

Capital Issues Committee Wants All New Utility Work Stopped Except that Necessary to War

Every extension of an electric railway line, electric lighting system, water main, street paving or other public utility enterprise not absolutely essential to the war should be postponed until peace times, said the Capital Issues Committee in a letter sent on Aug. 26 to all state public utility commissions. These state bodies were urged not only to frown upon additions and betterments requiring capital expenditures, but also to remove from public service corporations, if possible, the necessity of carrying out contract or franchise obligations which might be dispensed with in the war emergency.

### A PRELIMINARY MEASURE

The letter was the first of several measures planned by the Capital Issues Committee in co-operation with the Treasury and other financial agencies to draw tighter the nation's purse strings and prevent by a voluntary, though effective, method of supervision the dissipating of capital in less essential enterprises. In writing to the state commissioners the committee made the following statement:

"You are, of course, familiar with the creation by Congress of the Capital Issues Committee for the purpose of giving effect to the Government's policy of 'War Business First' by supervising the issuance of new securities for capital expenditures. It is plain that all of us must avoid every unnecessary use of capital, involving also the use of labor and materials, in order not to interfere with the financial and industrial requirements of the government in its paramount task of waging and winning the war.

"If the men, money and material which the government needs are to be made available for essential war purposes, there must necessarily be a considerable degree of sacrifice on the part of individuals, communities and corporations in adjusting themselves to the substitutions and changed standards which the situation compels. Existing facilities must be made to serve in place of new ones, regardless of temporary inconvenience and discomfort, unless the public health or paramount local economic necessity is involved.

### APPLY WITH MARKED FORCE TO UTILITIES

"May we suggest to you that these considerations apply with marked force to the public utility situation. The extensions and betterments which public service corporations are accustomed to

make in normal times, either on the initiative of their own enterprise or by direction of the regulating commissions under which they operate should, in our opinion, be postponed until after the war, unless an immediate war purpose is served, and may we ask of you consideration of the propriety of deferring even the performance of contractual obligations arising from franchise or other local requirements, when no military or local economic necessity is served by such expenditures.

"The Capital Issues Committee feels certain that your commission will recognize the paramount need of the national government when passing upon proposed additions and extensions by public utility companies, and asks that you co-operate in giving effect to the purposes of the government by restricting every unnecessary use of capital, labor and materials for extensions, betterments, street paving, or other purposes, even waiving, if in your power, the legal requirements that obtain in times of peace, until the present emergency has passed."

### COMMITTEE HAS WHIP HAND

The suggestion of the committee, which consist of seven members, with Charles S. Hamlin, member of the federal reserve board, as chairman, carries special weight in view of the committee's power to supervise applications for issuance of stocks, bonds or other securities for capital purposes, and to withhold its approval if it deems the project non-essential to the war. Recent developments have shown that most banks and organized investors decline to buy securities not approved by the committee.

### P. R. T. Stockholders Meet in October

The annual meeting of the stockholders of the Philadelphia Rapid Transit Company regularly called for Sept. 18, the third Wednesday of the month, will be adjourned until Oct. 16, the third Wednesday of October, and the completion of the full annual report for the year ended June 30, 1918, will be deferred until after the date set by the Public Service Commission for its consideration of the city contract. As the action of the commission on this important matter will be far-reaching in its effects on the future financing of the company and the transportation facilities supplied to the public, it is greatly desired that the management be in a position, when submitting the annual report to the stockholders in October, to then recommend such policy as may be made necessary by the decision of the Public Service Commission.

## Reorganization Approved

California Commission Sanctions Plan for Rehabilitation of Petaluma & Santa Rosa Railway

The California Commission has issued an order approving the reorganization plan of the Petaluma & Santa Rosa Railway. This plan contemplates that the properties of the company, which have been ordered sold at foreclosure sale, be acquired by a new corporation.

### \$1,872,000 of NEW SECURITIES

Under the order of the commission the new corporation is authorized to issue \$698,400 of 5½ per cent, twenty-five-year first mortgage bonds, \$173,600 of 6 per cent cumulative preferred stock, and \$1,000,000 of common stock to acquire the properties. The order of the commission, however, provides that none of these securities shall be issued until the commission has rendered a supplemental order approving the company's articles of incorporation and trust deed.

The Petaluma & Santa Rosa Railway has outstanding \$655,000 of 5 per cent first mortgage bonds due on March 1, 1924, \$217,000 face value of 6 per cent second mortgage bonds, due on April 21, 1917, and \$994,100 of common stock. In addition the company has pledged \$80,000 of first mortgage and \$33,000 of second mortgage bonds to secure the payment of \$76,600 of notes.

The holders of stock of the Petaluma & Santa Rosa Railway are asked to subscribe for stock in the new company at the rate of \$10 a share. The funds thus realized will be used to pay the \$76,600 of notes and pay reorganization expenses. The first mortgage bondholders of the Petaluma & Santa Rosa Railway are to receive an equal amount of 5½ per cent bonds of the new corporation. The \$217,000 of second mortgage bonds outstanding will be refunded through the issue of \$43,400 of first mortgage bonds, \$43,400 of common stock and \$173,600 of 6 per cent preferred stock.

### VOTING TRUST FOR SEVEN YEARS

In referring to the voting trust, the commission in its decision makes the following comment:

"The reorganization plan provides for a voting trust, effective for a period of seven years, under the terms of which the preferred stockholders are given control of the properties in the event that the dividends on the preferred stock are not paid regularly. We believe that all classes of stockholders should have all the power and control to which their ownership entitles them. We do not believe that one class of stockholders should be restricted in their complete enjoyment of all their usual rights. However, as they have seen fit, or may be willing, to surrender their rights, the commission should not interpose any objections."



## Denver Feels Higher Costs

Result of Operation in 1917 Was a Decline in Net Income from \$424,700 to \$201,500

The gross earnings of the Denver (Col.) Tramway System during the year ended Dec. 31, 1917, increased \$143,591 or 4.38 per cent over those for the preceding year. The operating ex-

stallation brought substantial savings through the large reduction in coal consumption and the reduction in power-plant payroll. Owing to the doubling of coal prices, however, the power-plant economies were practically all absorbed.

The operating ratio (taxes not included) was 56.0 per cent for the Denver Tramway in 1917, as compared to 66.6 per cent for the United States and 66.9

As was the case a year ago, the returns show an increase in the number of passengers carried at each of the several fare denominations from 1 cent to 8 cents. The large increase has occurred, however, in the number of passengers carried for the 1-cent fare—272,902,138, a gain of 24,930,790 passengers. There is an increase of 10,489,891 in the number of passengers carried for the 2-cent fare. As compared to the 272,902,138 passengers transported at the 1-cent fare, the total for all other fares is 158,044,428.

The car mileage was 26,261,231, an increase of 475,184 miles. Traffic receipts per car-mile were 25 cents, an increase of 2½ cents, and traffic receipts per passenger were 1½ cents, an increase of 0.023 cent. Passengers carried per car-mile numbered 16,409, an increase of 1350.

TRAFFIC STATISTICS OF DENVER TRAMWAY SYSTEM FOR CALENDAR YEARS 1916 AND 1917

	1917	1916
Passengers carried:		
City lines	78,908,562	75,133,046
Interurban lines	1,075,435	1,065,451
Total	79,983,997	76,198,497
Passenger earnings per car mile (cents):		
City lines	26.65	25.86
Interurban lines	27.76	29.30
Passenger earnings per car hour:		
City lines	\$2.55	\$2.49
Interurban lines	4.95	4.89
Car miles operated, passenger:		
City lines	11,696,325	11,427,964
Interurban lines	381,162	389,726
Total	12,077,487	11,817,690
Car hours operated, passenger:		
City lines	1,229,789	1,184,588.2
Interurban lines	21,359	23,351.2
Total	1,242,148	1,207,939.4

penses, however, advanced \$301,158 or 18.6 per cent. This increase was principally caused by wage grants at the rate of \$161,000 a year and the great rise in costs of materials.

The taxes in 1917 increased approximately \$76,742. On the other hand, the other income fell off slightly. The deductions from income decreased on account of retirement of bonds through sinking funds and maturities. The net result of these changes was a loss in net income from \$424,732 in 1916 to \$201,553 in 1917.

During the last calendar year the expenditures for betterments and improvements totaled \$237,347. Of this amount \$167,336 covered the cost of a new steam turbo-generator of 9375 kva. capacity, with condenser and auxiliaries, and one 3000 kw. rotary converter with transformer and additional switchboard apparatus. This in-

crease was principally caused by wage grants at the rate of \$161,000 a year and the great rise in costs of materials. The taxes in 1917 increased approximately \$76,742. On the other hand, the other income fell off slightly. The deductions from income decreased on account of retirement of bonds through sinking funds and maturities. The net result of these changes was a loss in net income from \$424,732 in 1916 to \$201,553 in 1917.

The accompanying table gives some miscellaneous statistics for passenger traffic and earnings on the city and the interurban lines of the system.

### Increased Traffic in Glasgow

The report of the Glasgow Corporation Tramways Department for the financial year ended May 31, 1918, shows substantial increases. The traffic receipts amounted to \$6,833,102, an increase of \$771,837 over the preceding year, while the number of passengers carried reached the aggregate of 430,946,566, an increase of 42,651,690.

COMPARATIVE INCOME STATEMENT OF DENVER TRAMWAY SYSTEM FOR CALENDAR YEARS 1916 AND 1917

	1917		1916	
	Amount	Per Cent	Amount	Per Cent
Gross earnings	\$3,419,467	100.0	\$3,275,876	100.0
Operating expenses (including partial depreciation):				
Maintenance	\$472,313	13.8	\$317,301	9.7
Operation	1,143,194	33.4	1,026,268	31.3
General	300,426	8.8	271,206	8.3
Total	\$1,915,933	56.0	\$1,614,775	49.3
Net earnings	\$1,503,534	44.0	\$1,661,101	50.7
Taxes and franchise payments	353,182	10.3	276,440	8.4
Operating income	\$1,150,352	33.7	\$1,384,661	42.3
Other income	19,818	0.5	21,233	0.6
Gross income	\$1,170,170	34.2	\$1,405,894	42.9
Deductions from income:				
Interest on funded debt	\$966,440	28.2	\$980,488	29.9
Interest on notes and accounts payable	2,177	0.1	674	0.0
Total	\$968,617	28.3	\$981,162	29.9
Net income	\$201,553	5.9	\$424,733	13.0

### New Capital Stock Tax Rulings

Collector William H. Edwards of New York made a statement on Aug. 27 to elucidate the capital stock tax, returns for which must be filed and payments made by Sept. 30.

The statement is based on the latest rulings from Washington. Mr. Edwards said:

"All companies not specifically exempt are required to file returns, even though they are not taxable, and regardless of the market value of their capital stock, whether over or under \$75,000.

"Previous regulations also held that both parent and subsidiary companies were liable to tax. The new regulations hold that companies exclusively engaged in the holding of securities of other companies are not engaged in business within the meaning of this act. However, a company engaged in business in addition to owning the securities is liable to the tax.

"Previous regulations held that capital stock once issued would be regarded as outstanding, even though it had been reacquired by the company and carried on its books as treasury stock. This ruling is canceled by the new orders.

"Previous regulations provided rates for capitalizing average of annual net income for determining fair value. New regulations provide that taxpayers shall use for this purpose the rate prevailing in the particular business and locality to make the stock of companies similarly engaged worth par.

"Previous regulations provided that fair value would be determined and reported as follows: First, by market quotations; second, by prices at which shares were sold if not listed on any exchange; third, by an estimate based on book value or a capitalized average of the annual net income.

"New regulations provide for reporting as the fair value the amount shown by the exhibit reflecting the greatest value, except under certain conditions, when the fair value would be the sum reflected by the exhibit which more nearly conforms to the required value."



# Financial News Notes

**Canadian Line Loses Too.**—The municipally owned London & Port Stanley Railway, London, Ont., showed net earnings of \$23,508 for the year ended June 30, 1918, as compared to \$26,581 the year preceding. Traffic on this electrified line has gained and rates have been increased, but despite these the higher operating costs caused a reduction of \$3,077 or 11.5 per cent in net. The gross earnings in 1918 totaled \$368,914 as compared to \$316,685 in 1917, but the expenses rose from \$290,103 in 1917 to \$345,410 in 1918.

**Interstate Railways Report Loss.**—The income of the Interstate Railways, Camden, N. J., for the year ended Jan. 31, 1918, totaled \$519,117. After meeting expenses and taxes of \$447,504 and preferred dividends of \$30,000, the company had remaining a surplus of \$41,613 for the year. The net income of the last year was substantially less than that for 1916, which is explained by an increase in taxes and the failure of the Trenton systems to pay the instalments of rent due Sept. 30, 1917, and Dec. 31, 1917. This was attributable to financial, commercial and labor conditions.

**American L. & T. Breaks Even.**—During the calendar year 1917 the number of passengers carried by the subsidiaries of the American Light & Traction Company, New York, N. Y., increased 9,430,662 or 33.52 per cent. The total gross for the period increased \$2,307,138, but this was largely offset by a rise of \$2,010,000 in operating expenses and taxes. The net earnings of the holding company for the year were \$5,023,381 as compared to \$5,648,026 in 1916. Dividend disbursements in the two years amounted to \$4,828,107 and \$4,457,767 respectively. The surplus balance on Dec. 31, 1917, was \$12,246,872 as compared to \$12,051,598 at the end of 1916.

**Emergency Measures to Save Road.**—The Laconia (N. H.) Street Railway

management has decided not to junk the entire road as originally contemplated. Instead it is planned to install one-man cars and improve the finances of the company. Various plants of partial reorganization are under consideration. The part of the road known as the South End loop, about 1.3 miles, is no longer operated and will be ultimately torn up. It is planned to give fifteen-minute service with new one-man cars on the important section of the road from Walker Square, Laconia, to Stark Street, Lakeport, in place of the present thirty-minute service with large two-man cars.

**Commonwealth Bond Plan Effective.**—A majority of the bondholders of the Commonwealth Power, Railway & Light Company, Grand Rapids, Mich., have deposited their holdings under the plan for the refunding of the \$8,900,000 of 6 per cent securities outstanding and which matured on May 1 last. The War Finance Corporation advanced \$2,400,000 to the corporation and asked bondholders to accept a new five-year bond bearing 7 per cent interest instead of 6 per cent. The War Finance Corporation ruled that its advance of \$2,400,000 was contingent on the acceptance of the new plan by at least 70 per cent of the bondholders, and this requirement was more than met.

**Will Let Dividends Accumulate.**—In a statement to stockholders the board of directors of the Middle West Utilities Company says: "Public discussion indicates quite clearly that the normal tax on incomes will be considerably increased. While it is not altogether clear that the interest bearing certificates heretofore issued in lieu of cash dividends upon preferred stock of the company will not be taxable as income, the board of directors, having due regard to the wishes of the stockholders from whom they have heard, are persuaded that it is to the best interest of the stockholders for the time being to defer the declaration of preferred dividends in certificates and allow the dividends to accumulate.

**Ferries Carry 46,000,000.**—Transbay ferries on San Francisco Bay carried more than 46,000,000 passengers during the fiscal year ended June 30, 1918, according to a statement recently made by John K. Bulger, supervising inspector of steam vessels at San Francisco. Of this number the Southern

Pacific carried on its Oakland, Alameda and Creek routes 24,513,713; 18,982 between Port Costa and Benicia in local travel, and 717,541 between Vallejo and Vallejo Junction. The Key Route, San Francisco-Oakland Terminal Railway, carried 14,319,326, the Northwestern Pacific 5,529,644, the Santa Fe 262,988 and the Western Pacific 67,137. Other ferries included are the Monticello Steamship Company, the Petaluma & Santa Rosa Railway, Martinez-Benicia ferry and Richmond-San Rafael boats.

**Three-Year 7 Per Cent Notes Offered.**—Stone & Webster, Boston, Mass., are offering for subscription \$750,000 of Eastern Texas Electric Company, Beaumont, Tex., three-year 7 per cent gold coupon notes dated Aug. 1, 1918, and due Aug. 1, 1921, at a price to yield about 7 3/4 per cent. The notes are in denominations of \$100, \$500 and \$1,000. They are callable prior to Aug. 1, 1920, at 101 and accrued interest and at 100 and interest thereafter on thirty days' notice. The proceeds from the sale of the notes will be used to retire the present issue of \$500,000 of 6 per cent coupon notes of the company due on Dec. 1, 1918, and will also be applied to the retirement of the company's floating indebtedness now amounting to \$300,000, which has been incurred for additions and extensions to the company's plant.

**Northern States Notes Offered.**—The Guaranty Trust Company, New York, N. Y., the Illinois Trust & Savings Bank, Chicago, H. M. Bylesby & Company, Bonbright & Company and Spencer Trask & Company, compose a syndicate offering an issue of \$2,000,000 of five-year sinking fund convertible 7 per cent notes of the Northern States Power Company (Minnesota). The offering price will be 96 and interest, yielding about 8 per cent on the investment. The notes are to be dated Aug. 15, 1918, and will fall due Aug. 15, 1923, and are convertible at any time after Jan. 1, 1919, into 7 per cent cumulative preferred stock or common stock of the Northern States Power Company (Delaware) at a price of par for the notes, 95 for the preferred stock and 100 for the common stock, with adjustments for accrued interest and cash dividends. Strong sinking fund provisions will retire 45 per cent of the notes before maturity.

## Electric Railway Monthly Earnings

CITIES SERVICE COMPANY, NEW YORK, N. Y.					
Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$1,789,252	\$34,960	\$1,754,292	\$7,062	\$1,747,230
1m., July, '17	1,363,312	34,011	1,331,301	229	1,331,072
12m., July, '18	21,331,886	399,580	20,932,306	20,648	20,911,658
12m., July, '17	16,559,106	314,280	16,244,826	3,759	16,241,067
REPUBLIC RAILWAY & LIGHT COMPANY, YOUNGSTOWN, OHIO					
1m., July, '18	\$453,488	*\$324,612	\$128,876	\$97,643	†\$38,173
1m., July, '17	388,062	*257,983	130,019	84,221	†56,142
12m., July, '18	5,833,075	*3,899,150	1,633,925	1,124,700	†596,973
12m., July, '17	4,344,363	*2,749,919	1,594,444	923,281	†714,354
PHILADELPHIA (PA.) RAPID TRANSIT COMPANY					
1m., July, '18	\$2,437,393	\$1,429,475	\$1,007,918	\$811,330	\$196,588
1m., July, '17	2,726,262	1,680,547	1,045,715	814,287	231,428

\*Includes taxes. †Includes non-operating income.

BANGOR RAILWAY & ELECTRIC COMPANY, BANGOR, ME.					
Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., June, '18	\$73,723	*\$43,850	\$29,873	\$19,502	\$10,371
1m., June, '17	65,662	*40,422	25,240	18,738	6,502
12m., June, '18	910,855	*539,500	371,355	234,003	137,352
12m., June, '17	862,877	*488,713	374,164	221,471	152,693
CLEVELAND, PAINESVILLE & EASTERN R.R., WILLOUGHBY, OHIO					
1m., June, '18	\$50,169	*\$34,998	\$15,171	\$11,795	\$3,376
1m., June, '17	47,431	*31,632	15,799	11,615	4,184
6m., June, '18	256,192	*175,870	80,322	68,939	11,382
6m., June, '17	243,320	*152,559	90,761	70,569	20,192
COLUMBUS RAILWAY, POWER & LIGHT COMPANY, COLUMBUS, OHIO					
1m., June, '18	\$349,168	*\$214,254	\$134,914	\$55,452	\$79,462
1m., June, '17	311,975	*236,732	75,243	47,019	28,224
12m., June, '18	4,229,372	*3,084,224	1,145,148	615,711	529,437
12m., June, '17	3,747,491	*2,474,273	1,273,218	531,282	741,936



# Traffic and Transportation

## Columbus Explains

Fare Rebate Slips in Effect Will Be Redeemed if Courts Decide Against Company

Henry L. Scarlett, city attorney of Columbus, Ohio, has filed a motion in the Federal District Court in which he asks that the suit be dismissed that was brought by the Columbus Railway, Power & Light Company to prevent the city from interfering with its increase in the rate of fare. He asserts that the court does not have jurisdiction in such a case and that the company's petition does not state facts sufficient to constitute a cause of action.

### TRAFFIC FALLS OFF

The increase in the rate of fare has been followed by a reduction in traffic. Some of the patrons have used the cars every day without paying, when the conductors refused to sell them tickets. Conductors made no effort to eject them and this policy will be maintained until the courts decide the matter.

A rebate slip good for 1½ cents is given to each person paying a cash fare and a slip good for 1 cent, to each person paying 1 cent for a transfer. In case the courts should declare the increase in fare illegal, these slips will be redeemed by the company in cash or Thrift Stamps.

Officers of the company state that the increase in wages recently granted to the motormen and conductors will aggregate \$700,000 annually and that people who are engaged in circulating stories to the effect that the new rate of fare will yield large profits are misinformed.

S. G. McMeen, president of the company, published the following statement in regard to the action taken by the company:

"In furtherance of its plan to charge 5 cents for a ride and 1 cent additional for transfer, the company appeals to the people of Columbus and to their American spirit of fair play.

### EARNING \$31,000 LESS THAN BOND INTEREST

"For the twelve months ended June 30, 1918, the company's railway earnings, after deducting the necessary amount for taxes and depreciation, fell short by more than \$31,000 of the amount of bond interest properly chargeable to its railway property. In addition to this deficit the company faces a further deficit of more than \$560,000 for the next twelve months as a result of the wage increases recently awarded its railway employees by the War Labor Board. In making that award, the War Labor Board recognized the necessity for higher fares in order to meet the increased wages

so awarded, and in strong terms urged the proper rate-making body to grant the company relief in the form of such higher fares. No such relief has been granted and the company now submits to the people the following plan:

"1. The company's railway patrons are asked to pay a 5-cent fare with 1 cent additional for transfer.

"2. Each person paying a 5-cent fare will receive a rebate check for 1½ cents and each person paying 1 cent for a transfer will receive a rebate check for 1 cent, these rebate checks to be redeemable provided it is finally decided by a court of competent jurisdiction or otherwise that the discontinuance by the company of the sale of eight tickets for 25 cents is illegal.

"3. For the purpose of properly determining, among other things, whether or not these rebate checks shall be so redeemed, the company has already instituted suit in the United States Court.

"4. Outstanding tickets, with free transfer privilege, will be accepted as heretofore until all such tickets shall have been honored.

"5. Until further notice there will be no discontinuance of service unless ordered by some competent authority.

"In this endeavor to secure sufficient revenue to meet its operating expenses the company earnestly asks the co-operation and support of the public."

### NEW TRANSFER RULES ADOPTED

In making this change the company adopted new transfer rules, fixing the points of transfer, so that patrons can not ride up town and back on one fare and a transfer, or sell the transfer to some one else for that purpose.

## Youngstown Report Accepted

The City Council at Youngstown, Ohio, on Aug. 16 adopted the report of the street railway committee which recommended that the Cleveland plan be used there in operation of the railway, which is owned by the Mahoning & Shenango Railway & Light Company.

A special committee has been investigating the Tayler plan at Cleveland and will shortly make a report of its findings. It appears that most of the members of Council are favorable to the plan, which calls for a cost basis, plus proper return on the investment. The railway is willing to accept the idea, as are the state officials.

Peter Witt, former street railway commissioner at Cleveland, will speak in Youngstown soon and explain the operation of the plan. It has been suggested that Mr. Witt be retained in connection with the settlement in Youngstown, but this has not been fully settled.

## Buffalo Retrenching

Owl Service Cut Materially in Effort to Keep Down Expenses Following Refusal of Fare Increase

Service between midnight and 5 a. m. was abolished on thirteen of the lines of the International Railway, Buffalo, N. Y., on Aug. 25. This step was taken by the company to decrease its operating expenses and to continue in effect, temporarily at least, the advance in wages of the trainmen, made on June 18. As a result of the referendum of the voters taken on Aug. 20, the International Railway is prohibited from increasing the rate of fare on the company's city lines in Buffalo.

E. G. Connette, president of the company, in a statement announcing the curtailment of all-night car service says:

### FIVE-CENT SERVICE FOR A FIVE-CENT FARE

"It was decided by the referendum vote that the International Railway must continue to operate under the limitations of a 5-cent fare, and therefore, it will be necessary for the company to effect readjustments and economies in the service. The officers of the company were directed by the board of directors to give the best possible service within the fare limitations, and to announce any readjustments in advance of their going into effect. A shortage of 250 trainmen makes it necessary to give service during periods most required and to curtail it when it is least needed. So light has been the traffic on the owl cars up to 5 o'clock in the morning that the service will be discontinued except on six city lines."

Under the order discontinuing all-night service many sections of the city are without service after 12:30 a. m. Even on the lines where owl service is maintained, the schedules have been cut from half-hourly service to one car an hour.

Members of the Council who aided the railway in its campaign for higher fares and voted for the resolution to raise the fares are opposed to the company's abolishment of all-night service on the majority of the city lines.

### DIRECTORS DISCUSS WAGES

At the meeting of the board of directors of the railway, called to discuss the action of the voters at the special referendum, it was agreed to continue in effect the wage advance recently granted the platform men. The directors took no action on the award of an additional increase of approximately 6 cents an hour granted the employees by the War Labor Board. This latter award was based upon the company's right to collect a 6-cent fare. The award is automatically canceled with the voters' disapproval of a higher fare. No other action was taken by the directors, according to a statement made by President Connette.



## Lacks Jurisdiction Over Rates

Georgia Commission So Holds in Atlanta Fare Case, but Recommends a Six-Cent Fare

The Railroad Commission of Georgia has recommended to the City Council of Atlanta that a 6-cent fare be granted to the Georgia Railway & Power Company but has withheld its decision regarding fare increases on the interurban lines to Stone Mountain, Camp Gordon and Marietta, Ga. The following extracts from the commission's report give the gist of the situation:

### COMPANY FACES SERIOUS PROBLEM

"We do not believe the applicant is facing bankruptcy. We are impressed, however, with the fact that serious problems of financing confront the company, and that upon their prompt solution depends in a large degree its ability to render the vitally important services the public demands.

"It is our conviction that such emergency relief as seems necessary should be spread throughout all the rates covering the entire business of the company.

"The commission finds itself, however, confronted with a grave and difficult question of jurisdiction and power as to affording any of such relief through increases in applicant's street railway rates.

"Section 5 of the act of the general assembly approved on Aug. 23, 1907, increasing the membership and powers of the commission, is in part as follows:

"The powers and duties heretofore conferred by law upon the Railroad Commission are hereby extended and enlarged so that its authority and control shall extend to street railroads and street railroad corporations, companies, or persons owning, leasing or operating street railroads in this state;

"Provided, however, that nothing herein shall be construed to impair and valid subsisting contract now in existence between any municipality and any such company; and provided that this act shall not operate as a repeal of any existing municipal ordinance."

### MATTER NOW UP TO COUNCIL

"This commission believes that the applicant is entitled to an increase in its car fares, and that a 6-cent fare would be reasonable and just, so long as existing abnormal war conditions prevail, and the justice of granting such increases by amendment to existing contracts and ordinances, is earnestly urged upon the councilmanic authorities of Atlanta, Decatur and College Park, with the assurance on the part of this commission that, simultaneously with the effective date of such amendment, similar provisions will be made by it as to fares in territory not included in the municipalities mentioned. The commission does not recommend any charge for transfers."

The granting of increased fares is entirely up to Atlanta's Councilmanic body, unless the courts decide that the commission is clothed with the proper

powers. Expressions of opinion from the commission's special counsel follow:

"It must be borne in mind that the question in this case is not whether the state of Georgia has surrendered to the city of Atlanta the sovereign right to fix the rates of this company, so that the same can not be altered or changed, but whether the Legislature of the State has delegated to the Railroad Commission the power to fix such rates, where the same had been previously fixed between the city of Atlanta and the company by contract or ordinance. This distinction is of vital importance in this discussion. We repeat that the question is not, whether the State of Georgia has surrendered its power to fix those rates, but whether it has granted to the Railroad Commission of Georgia the power to fix such rates, when the same had been fixed by contract between the city and the company, or by municipal ordinance. We do not contend that any such surrender of this governmental function has been made by the Legislature to any of the towns or cities in which this company operates.

"As the State has not actually divested itself of the power to fix these rates, an agreement by which the city and this company fix these rates is made subject to the right of the State to change the same.

### CAN'T IMPAIR CONTRACT

"The street railway asks for a 6-cent fare within the city limits of Atlanta and 2 additional cents for each transfer. So clearly if the commission grants the application of the company its action will impair this contract between the city and the railway and will pro texto repeal the consolidating ordinance under which the railway is now operating.

"There is no question that if the application of the railway is granted by the commission this action will amount to an impairment of the contracts between the cities of Decatur, College Park and Edgewood on the one part and the railway on the other part.

"So, in my opinion, the Railroad Commission of Georgia is without jurisdiction to fix the rates within the city of Atlanta, and the rates from and to the other cities above mentioned, so as to alter or change the rates prescribed in the contracts between the company and these cities. The only tribunal which can change these rates is the Legislature of Georgia, the latter having excepted from the grant of power to this commission the right to impair those contract rates or to repeal ordinances under which they were fixed."

A statement made by Mr. Arkwright, president of the Georgia Railway & Power Company, follows:

"The decision of the Railroad Commission vindicates in every particular

the position taken by the company on the merits of all matters involved, including the absolute necessity of an increase in the railway fares to 6 cents in order to meet increased expenses and furnish efficient service. They were prevented from authorizing the increase in railway fares because of a law point involved which the special attorney to the commission decided prevented the commission from granting the relief found to be necessary.

"Pending the solution of the question by the courts or by the City Councils as recommended by the commission, the company will be deprived of the resources necessary to give increased wages to its employees."

The Mayor-elect was elected to office on the platform of municipal ownership of electric plants and street railways and came out strongly against any increase in the company's rates. On Aug. 19 the City Council voted twenty-five to one to restrain the company from putting the new rates into effect on Sept. 1 and decided to start legal proceedings with reference to the ordinance now in existence regarding the 5-cent fare. In some quarters the action of the Council is regarded as its dying gasp while in others it is taken to be the first gun in a determined war on the company.

## Kansas Interurban Gets Increase

The Public Utilities Commission of Kansas on Aug. 15 granted the Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan., increased passenger and freight rates, which will go into effect late in September. In both cases, further investigation is announced, and the rates are explicitly called temporary, to meet the emergency of higher fuel, labor and supply costs due to war conditions. The statement is made that within a year, and anyway at the end of the war, a readjustment will be considered. The company had asked freight rates on a parity with the recent increases granted the steam roads. The advances granted were not to this extent, being only 10 per cent above the existing rates of the line, with the exception of rates on milk, which are not to be changed. Milk rates are now about those charged on Kansas railroads for express. The commission granted a 2½-cents-per-mile basis for passenger rates, as against 3 cents per mile asked.

An unasked-for feature of the commission's order is the schedule of commutation rates. The company has not had any commutation rates heretofore, though, such rates have been used on other interurbans operating in Kansas. The Kaw Valley line's new schedules, under the commission's order, will provide for coupon books for forty single rides in thirty days, on the basis of 2 cents a mile.

The company is permitted to make an excess charge of 10 cents, when passengers who board cars at stations where tickets are sold, do not supply themselves with tickets.



## Increases on Interstate Line

### Massachusetts Commission Authorizes Retention of Five-Cent Minimum, but Increases Zones

In a decision dated Aug. 14 the Public Service Commission of Massachusetts authorized various fare increases on the Interstate Consolidated Street Railway, substantially approving the recently filed tariff of these lines. The company proposes to retain the 5-cent minimum fare, but to increase the number of zones in which this fare is to be charged. The results of this change may be tabulated as follows:

	Present Charge Cents	New Charge Cents
Plainville to Attleboro.....	5	10
Plainville to Pawtucket, R. I., north line.....	10	20
No. Attleboro to Attleboro..	5	5
No. Attleboro to So. Attleboro.....	5	5
No. Attleboro to Pawtucket, R. I., north line.....	10	15
Attleboro to Pawtucket, east line.....	10	15
Attleboro to Pawtucket, south line.....	10	15
Attleboro to So. Attleboro..	5	5
So. Attleboro to Pawtucket..	5	10

The entire benefit of this increase will not in all cases go to the Interstate Consolidated Company, as the Rhode Island Company has recently been permitted by the Rhode Island authorities to charge 5 cents between Pawtucket and the State boundary, and to discontinue the present joint fare with the Interstate company. Temporarily this arrangement has been continued, but it would cease to exist under the proposed new tariff. Between North Attleboro and Pawtucket the present fare is 10 cents, but the Interstate company's portion of this averages only 7.5 cents. Under the new tariff the fare would be 15 cents, 10 cents going to the Interstate company. The situation between Attleboro and Pawtucket is similar. The company proposes to eliminate all overlaps and transfer privileges, with the result that in Attleboro and North Attleboro 10 cents would be charged for any ride, however short, passing the railroad station in one case and Wamsutta Corner in the other. The company estimates that the proposed new fares would produce a gain in revenue of about \$46,500 a year.

#### ALTERNATIVE PLAN REJECTED

The Mayor of Attleboro offered an alternative plan, which, if adopted on all lines, was estimated to yield about \$25,000 additional revenue. Upon consideration the commission was of the opinion that the company's plan should be adopted, with some minor modifications.

One defect in the company's proposed tariff, the commission holds, lies in the fact that the fare zones in no case overlap and that transfer privileges are entirely eliminated. The result would be that 10 cents would be charged for a very short ride in the thickly settled portion of Attleboro, North and South Attleboro. In the

judgment of the board the tariff should be modified to correct this defect, the detailed method being left to the company.

A further and more serious defect, which, however, is beyond the jurisdiction of the Massachusetts commission, relates to the charge between Orr's Corner in South Attleboro and adjacent points, and Pawtucket. Under the new tariff this fare would be 10 cents for a ride of about 3.5 miles, since the traffic center of Pawtucket is less than 1 mile from the State boundary line.

If there were only one company and no State boundary, the commission believes that a lower fare than this would be deemed reasonable even by the management, and it is hoped that the Rhode Island and Interstate companies will be able to agree upon some joint ticket arrangement which would offer a fare of say 7 cents to regular riders. South Attleboro is closely associated in a business way with Pawtucket, and the proposed 10-cent fare would, in the opinion of the commission, be an unreasonable hardship for many workmen.

If no agreement can be reached upon this point, the Public Service Commission is prepared to lend its aid in an appeal to the Interstate Commerce Commission. If a joint ticket is provided, it should, in the opinion of the commission, be available for use in connection with through traffic from points north of South Attleboro.

## Accountants Oppose Rochester Increase

The Rochester lines of the New York State Railways have an annual return on capital invested sufficient to make a 6-cent fare unwarranted in Rochester, according to the report filed with the municipal authorities by Marvin Scudder and L. M. Scudder, accountants employed by the city to investigate the financial conditions of the company. The net income from the Rochester city lines in 1917 was \$608,595 and the experts state in their report that this year's net income will exceed \$200,000. The report will be discussed at a special meeting of the Council to be held soon. At that time the Council will decide whether or not favorable action will be taken on the application of the company for an increased fare.

The report comes as a result of a request made by the New York State Railways for permission to charge a fare higher than 5 cents. The Council then ordered an investigation of the company's books. The report shows that the New York State Railways makes no separation of any operating expenses between the city lines and lines outside of the city. The Scudder report shows that the total wage increases granted by the company in July amounted to \$19,922 and that the net increase for the entire year will be about \$94,000.

## New Jersey Case Reappealed

### Increase in Fare by Two Cents Not Enough to Meet New Requirements of Railway

T. N. McCarter, president of the Public Service Corporation of New Jersey, Newark, N. J., made it known on Aug. 29 at the hearing before the State Board of Public Utility Commissioners on the new application for permission to increase the fares to 7 cents that the company was ready to recede from its original attitude of seeking the increase during the period of the war and ask that the increase be permitted from Sept. 1 to Jan. 1 to make up the expected deficit due to the increase in wages ordered by the Federal War Labor Board. Mr. McCarter said that to meet the new obligations the company must secure \$860,000, and the only way to obtain it was to increase the fares 2 cents, and even with that increase the revenue would fall short of the sum needed.

At the close of the hearing, which lasted three hours, the Utility Board granted a postponement to Sept. 5 to give counsel for the municipalities time to verify the figures submitted by Mr. McCarter, who was the only witness.

Petitions were presented from each of the federal boards. After outlining the purpose of the law creating the Bureau of Industrial Housing and Transportation of the United States Department of Labor of the United States, the petition from that board was concluded as follows:

"That in the judgment of the United States Housing Corporation and the Bureau of Industrial Housing and Transportation of the Department of Labor, the maintenance of the financial stability of the existing lines of Public Service Railway is essential to the continuance of adequate service during the war and the acquisition of capital for the construction of extensions and improvements made necessary by the war."

## Urged to Hasten Fare Matter

There was an adjourned hearing recently of the petition of the New York State Railways for permission to increase its rate of fare from 5 cents to 6 cents before the Public Service Commission for the Second District. W. J. Kernan, Utica, represented the railway and Mayor James D. Smith and Corporation Counsel Merrill represented Utica and Corporation Counsel Hancock the city of Syracuse.

William McClellan testified concerning an appraisal of the property which had been made and which was incorporated in the report of the investigation made by Price, Waterhouse & Company of the railway company's financial condition. Mr. McClellan detailed items which were included in the appraisal which had been carried down to June 30, 1917. He said he would



continue the appraisal down to Jan. 1, 1918, and this will be introduced later.

Representatives of Utica and Syracuse contended that the appraisal should not be binding upon any future rate applications by the company.

Mr. Kernan asked that action on the company's petition be expedited as much as possible because of the increase in wages which the company had recently put into effect.

The presentation of the report of Price, Waterhouse & Company was referred to in the issue of the *ELECTRIC RAILWAY JOURNAL* of Aug. 10, page 261.

### Detroit Interurban Increases

An order establishing a passenger rate of fare of 2 cents a mile on the interurban lines of the Detroit (Mich.) United Lines has been handed down by the Interstate Commerce Commission at Washington. The order affects the Rapid Railway, including the Shore line; the Detroit, Monroe & Toledo Short Line Railway, between Detroit and Toledo; the Detroit, Jackson & Chicago Railway; the Orchard Lake, Pontiac, Flint and Imlay City divisions of the Detroit United Railway. The order will not affect city fares on the various lines named.

In its petition for an increase the railways pointed out the necessity of increasing revenues so that the increased cost of business be met and operation of the lines be not curtailed.

It is not likely that the new rate will be put into effect much before Oct. 1 due to the fact that it will not become effective until thirty days after new tariffs are filed with the commission and also the fact that it will take considerable time to prepare and print the new fare schedules.

The 2-cent-a-mile rate means from 25 to 50 per cent increases, the average per cent of increase being about 30. The lines mentioned serve 159 cities and villages within a radius of 75 miles of Detroit and have 894 miles of track.

### Transfer Protection at Fare Zones

Misuse of transfers issued on the Springfield (Mass.) Street Railway in connection with different fare zone tickets has led the company to require conductors to punch all transfers given out on an 8½-cent ticket once and all given out with 6½-cent tickets twice. By this means the collecting conductor will learn the kind of ticket originally used and how far the passenger holding the transfer is authorized to ride. If the passenger rides beyond the transfer limit associated with the particular ticket originally purchased, the conductor will then collect an additional fare. The tickets will be collected for the first fare on the second car and the transfer will be lifted for the second fare.

The company found soon after instituting the present system of zone fares that passengers who boarded cars near

the boundary of the first and second zones discovered that one stub of a two-ticket string was good for a ride in one zone alone if they requested a transfer. This reduced the cost of the ride to 3½ cents. The stubs used in the other zone were of no use to the original holders, but were exchanged with friends living in other zone limits. The new plan of transfer punching is expected to do away with the opportunities that existed previously for abusing the system.

## Transportation News Notes

**Women for Binghamton Cars.**—The Binghamton (N. Y.) Railway has engaged twenty-five women for use as conductresses on its lines in that city. The women are now undergoing instruction. Several of the women have sons engaged in war service.

**Wants Seven Cents in East Chicago.**—The Hammond, Whiting & East Chicago Railway, Chicago, Ill., has filed a petition with the Public Service Commission of Indiana asking authority to increase its railway fares in Hammond, East Chicago and Whiting from 5 cents to 7 cents for adults and to establish a 2½-cent fare for school children.

**Change in Gorge Route Fares.**—The Niagara Gorge Railroad, Niagara Falls, N. Y., on Aug. 2 filed with the Public Service Commission for the Second District a new tariff schedule relative to commutation fares which it proposes as effective on Sept. 1. Ten-trip, individual, twenty-trip, family or firm, forty-six-trip monthly school, and sixty-trip monthly individual between Niagara Falls, Lewiston and Youngstown and local points are advanced approximately 10 per cent. This is the gorge scenic route.

**Further Suspension of Elmira Tariff.**—The Public Service Commission for the Second District of New York on Aug. 15 ordered the operation of the Elmira Water, Light & Railroad Company's rates applying to passenger traffic between points other than Horseheads and Watkins and intermediate points further deferred until Sept. 17. This action was taken to permit Commissioner Fennell to complete the investigation. A prior suspension was until Aug. 19.

**New Trailers in Seattle.**—The Puget Sound Traction, Light & Power Company, Seattle, Wash., has recently put into service ten new trailers, built in the East for the company, with a carrying capacity of sixty-five passengers each. From 3 to 5 o'clock, the trailers are used on the shipyard lines, carrying thousands of workers to and from the tideflats; from 5 to 6:30, they are trans-

ferred to long local lines. The company now has a total of fifteen trailers in service.

**Durham Views Fare Increase Kindly.**—The increased fares at Durham, N. C., seem to be acceptable to the public, according to R. L. Lindsey, general manager of the Durham Traction Company. The 7-cent fare went into effect on Aug. 3, and, says Mr. Lindsey, "the public has taken to the increase very kindly, and we have been unable to discover, through our men, a single kick of consequence. We credit this to our publicity educational campaign during the preceding months."

**Emergency War Plant Service.**—The officials of the Singer Manufacturing Company, Elizabeth, N. J., and the Public Service Railway have entered into an agreement under which the employees of the Singer Company will operate cars and take the workers to and from work. This will relieve conditions caused by the lack of motormen and conductors. The railway will pay the men for the time they are on the cars. The Standard Aircraft Corporation, Elizabeth, recently put a similar plan into effect.

**Youngstown Retains Peter Witt.**—At an informal meeting on Aug. 22, the City Council of Youngstown, Ohio, approved the employment of Peter Witt, Cleveland, Ohio, to make a survey of the railway situation there with a view to the adoption of a system of municipally controlled operation similar to the Tayler plan in Cleveland. Four members opposed the employment of Mr. Witt, but favored the service-at-cost plan. Formal action was expected at the regular meeting during the week ended Aug. 31. A motion to increase the fare to 6 cents, pending the adoption of the service-at-cost plan, failed.

**Cleveland Training Women.**—The Cleveland (Ohio) Railway, during the week ended Aug. 24, began to employ and train women to take positions as conductors on its cars. At that time it was said that there were 600 vacancies. It is not the intention to replace men who wish to hold their positions, but the idea is to keep the force as nearly up to normal as possible. The women will be paid the same wages as the men and no difference will be made in their duties because they are women. Matrons will be employed at the carhouses on the lines where they are running. The women will be clad in khaki in summer and blue serge in winter.

**Ice Cream Containers and Bread Baskets Undesirables.**—The Indianapolis & Louisville Traction Company, Scottsburg, Ind., has filed a petition with the Indiana Public Service Commission asking for permission to increase rates on certain classes of freight with the idea of eliminating these freight items from the company's cars. A charge of 10 cents each is asked on empty ice cream containers and bread baskets and an increase in carrying charges for newspapers to 50 cents a 100 lb. The Louisville & Northern Railway & Lighting Com-



pany and the Louisville & Southern Indiana Traction Company are concerned in the petition.

**Wants Interurban Fare Increase.**—The International Railway, Buffalo, N. Y., has applied to the Common Councils of Tonawanda and North Tonawanda for permission to charge passengers 3 cents a mile on its lines between Tonawanda, North Tonawanda, and Buffalo and Niagara Falls. Representatives of the company told the Councils that unless the company was permitted to increase the interurban fares, schedules would have to be curtailed. Attention was called to the fact that the Buffalo & Lake Erie Traction Company, Buffalo, N. Y., and the Buffalo, Lockport & Rochester Railway, Rochester, N. Y., are now charging 3 cents a mile on their interurban divisions.

**Wheeling Fare Hearing.**—The Public Service Commission of West Virginia has concluded its hearing on the application of the City Railway, Wheeling, W. Va., for permission to cut out existing reduced rates of fare and to increase the straight cash fare within city limits to 6 cents, with free transfers to and from all connecting lines. Rates now in effect are: 5 cents cash fare to all points within the city limits, tickets six for 25 cents, free transfers to and from all connecting lines. In its application the company sets forth that the existing rates are unjust and confiscatory in that they do not enable the company to make a reasonable profit on the business done, owing to increased expenses of operation. A similar application of the Wheeling Traction Company has not been set for hearing.

**Oakland Takes Six-Cent Fare Gracefully.**—The 6-cent fare went into effect on the San Francisco-Oakland Terminal Railways, Oakland, Cal., without a hitch. A good deal of advertising was devoted to "selling the ideal" of the need for a 6-cent fare before it was actually put into effect. The *Key System News*, published by the railway, was of considerable aid in this. It is estimated that the majority of passengers board the cars with the exact change ready. This speaks well for the public relations of the company. The company had slides run in a number of moving picture theaters, briefly announcing the 6-cent fare, the reasons that made it necessary, and requesting that passengers have exact change ready. The decision in this fare case was reviewed in the *ELECTRIC RAILWAY JOURNAL* for Aug. 24, page 351.

**Act Against Two-Cent Law.**—The Illinois Traction System, Peoria, Ill., has filed a bill for an injunction in the Federal Court of the eastern district at Danville to restrain the operation of the 2-cent law. Attorney-General Brundage, members of the commission and state's attorneys of counties in which the company operates are made defendants. The company sets forth that the 2-cent law restrains any increase of its passenger fare and that

the present fare is insufficient to pay for the operation of its line under prevailing conditions. Similar injunction proceedings to prevent the State of Illinois from enforcing the 2-cent passenger law have been instituted in the Belleville Circuit Court by the Alton, Granite City & St. Louis Railway. The petition states that the company operates at a loss when compelled to carry passengers at 2 cents a mile.

**Truck-Interurban Haulage.**—Highway transport committees in both Kansas and Missouri have begun active organization work, towards stimulating truck travel on rural roads. Ostensibly the truck service is supposed to benefit communities without railroad service. In fact, however, both States have numerous instances of frequent truck service between towns having railroad connections, though such connections provide poor service. An attempt is being made to work out a program of truck-line development, under which the interurban railways will be used to the best advantage. For instance, it has been suggested that instead of planning truck service in lines radiating from Kansas City to a distance of 30 or 40 miles, the lines be laid out with reference to shortest hauls to interurban railways, where such planning is feasible. Thus, the dirt roads, not usable in wet weather, would not be depended on for the major part of the hauling.

**Another Seven-Cent Road.**—The New Jersey & Pennsylvania Traction Company, Trenton, N. J., announces that it will increase its rates from 6 cent to 7 cents in the several zones on all its Pennsylvania divisions. The new schedule of fares will become operative on Sept. 26. An increase in freight rates is also announced. The company says that commutation zone tickets for the use of school pupils under fifteen years of age and valid on regular school days only will be sold at the rate of \$1.60 per book of forty tickets each, upon application at the offices of the company at Trenton, N. J., and Newtown, Pa. The new schedule of freight rates affects all commodities. The minimum charge on any single shipment will be 25 cents. The company was recently authorized by the Board of Public Utility Commissioners of New Jersey to charge 6 cents on the four zones on the Princeton and Lawrenceville divisions, and by the Public Service Commission of Pennsylvania to charge a like amount on the Pennsylvania divisions.

**Higher Rates on Strang Lines.**—Higher passenger and freight rates went into effect on Aug. 15 on the Missouri & Kansas Interurban Railway, operating between Kansas City, Mo., and Olathe, Kan., as a result of orders of the Public Utilities Commission of Kansas. The railway had asked readjustment of rates, in some items requesting specific rates, in others asking only for relief, and to be put on parity with new railroad freight rates. The advances granted are about 10 per cent on freight except

milk, on which the company was already receiving about the same rate as the railroads. The new passenger schedule is based nominally on 2½ cents a mile; specific rates are mentioned for each station, in the commission's report, exact distances being figured between the stops at the basic rate. Commutation rates are retained between a few of the stations, with an advance of 25 per cent in such rates to school children. The previous rate to pupils was extremely low.

**Skip Stops in Chicago.**—Skip-stop operation of cars began on the Chicago Surface Lines on Aug. 25, without any noticeable change in the routine of daily transportation. The new system had been fully advertised in the cars and the newspapers as a government fuel conservation measure. Temporary signs had been posted on trolley poles at the near side of new stopping places several days in advance. There were no charges of discrimination in favor of particular streets because the new system was based on the house numbering system, stops being required outside of the loop district at streets nearest the number 100 or multiples thereof. Steam railroad crossing and other safety stops are to be continued, so that in certain districts there are more than eight stops to the mile. Some of the motormen on the first day made stops which were no longer required. This was from force of habit. In general, however, the new system worked without a hitch and there was a noticeable saving in time on many runs. Schedules for all routes will have to be re-written when the operating officials have had an opportunity to check up on the new running time.

**278 Additional Trips in Washington.**—Revised routes and complete new schedules for all the lines of the Capital Traction Company, Washington, D. C., calling for 278 additional trips daily and four new services, one of which will be operated between Potomac Park and the Eighth and F Streets Northeast, were announced on Aug. 19 by the Public Utilities Commission. They represent the efforts of the commission and the company to capitalize into better service the running time saved through the installation of skip stops on the company's lines several weeks ago. John A. Beeler, traffic expert for the commission, and officials of the company co-operated in framing the new schedules, which are expected to lead to a considerable improvement in service during both rush and non-rush periods. In framing the new schedules Mr. Beeler and the company officials determined the volume and character of traffic on each line and have sought to equalize the loading throughout the system and utilize the equipment to the best possible advantage. Service has been increased where it is needed most. The principal improvement will be noticed in the non-rush periods, where there is greater possibility of expansion. The changes went into effect on Aug. 25.



## Personal Mention

### Mr. Shaw a Firm Member

Former Railway Man and A. E. R. A. President Partner in Banking House of Knauth, Nachod & Kuhne

James F. Shaw, who has for more than one and a half years past been associated with the firm of Knauth, Nachod & Kuhne, bankers, of New York City, has become a general partner in that firm. His duties will be materially as before, consisting of the developing of new business, general underwriting, etc. This firm is one of the oldest private banking houses in New York, having been established in 1852. It has correspondents all over the world and does a large international banking business and deals in investment securities as well.

Although but forty-five years of age Mr. Shaw has had a remarkable career and at an early age achieved distinction in politics and in electric railway administration. He served for two terms as president of the American Electric Railway Association and its predecessor, the American Street & Interurban Railway Association, and during this period succeeded notably in strengthening that organization and expanding the field of its activities. Under his guidance the company and individual membership of the association was greatly increased and all of the members, both company and individual, were brought into closer touch with the administration and encouraged to take a more active part in the proceedings. Mr. Shaw saw the potential value of the experience of past presidents to the association and through his efforts the past presidents were induced to contribute time and energy much more effectively than before to the work of the association. He must also be credited with the inauguration of the mid-year meetings of the association, the first of which was held early in 1910, during his second term.

While president of the association Mr. Shaw advocated certain electric railway policies which are now generally received, although at the time they were somewhat novel. He believed that the basis for equitable rates of fare should be a scientific study of all of the costs involved, and that fares, taxes and standards of service should be adjusted with respect to each other and with justice to all parties concerned. He felt that the only way in which the proper public relations could be brought about was through frank publicity, and he therefore advocated the use of all means by which exact information regarding electric railways could be given to the public.

Mr. Shaw's electric railway career dates back to 1891, when at the age of eighteen he became superintendent of

the Black Rocks & Salisbury Beach Street Railway after a few months' experience with the Newport Car Company. This road was operated only in the summer months, and between seasons he engaged in the electric railway supply business. His genius for organization brought him many opportunities in the electric railway business in Massachusetts and by the time he was twenty-five years of age he was president and general manager of some thirteen different electric railways. He was the prime mover in the construction and operation of more than 600 miles of electric railway involving an



J. F. SHAW

investment of \$25,000,000. He was also actively identified with other lines of business.

Mr. Shaw served for three terms in the Massachusetts Senate, having been elected in 1907, 1908 and 1909. He was thus a Senator while president of the railway association, which he served in this capacity from 1908 to 1910. While in the Senate he was on the committees on rules, ways and means and military affairs, being chairman of the last named for three years and of the ways and means committee during the 1909 term. He exerted a strong influence in the Senate and was one of the original income tax men of Massachusetts. While his affiliations were naturally with corporations, yet he was able to reconcile the labor and corporation elements in the solution of problems in which their interests seemed to conflict. Although always a strong Republican, Mr. Shaw had the support of many of the Democratic members.

### Changes in Personnel

Syracuse Suburban Road Announcements—C. Loomis Allen Re-enters Management Field

Important changes have been announced in the personnel of the Auburn & Syracuse Electric Railroad, the Syracuse & Suburban Railroad and in the firm of Peck-Shannahan-Cherry Inc., Syracuse, N. Y.

By the change Peck-Shannahan-Cherry, Inc., retire from the management of the Syracuse & Suburban road, William J. Harvie retires as general manager and director, Milford Badgero retires as assistant treasurer and C. Loomis Allen becomes general manager of the road.

R. W. Palmer, now general manager of the Auburn & Syracuse Electric road, has resigned to take up a position in Philadelphia and Mr. Harvie has been named as general manager in his place.

These changes were announced by T. C. Cherry, vice-president of Peck-Shannahan-Cherry, Inc., and by C. Loomis Allen. Mr. Cherry said:

"R. W. Palmer, general manager of the Auburn & Syracuse Electric Railroad, has resigned, effective on Sept. 1, to accept a position with an operating company controlled by Philadelphia interests. Peck-Shannahan-Cherry, Inc., announce the appointment, effective on Sept. 1, of W. J. Harvie as general manager of the Auburn & Syracuse Electric Railroad, with headquarters in Auburn. Mr. Harvie is a member of the firm of Peck-Shannahan-Cherry, Inc., and will move his family to Auburn in the near future."

Mr. Allen's announcement reads:

"With the retirement of Peck-Shannahan-Cherry, Inc., from the management of the Syracuse & Suburban Railroad there will occur changes in the personnel of its officers. The resignations of W. J. Harvie as general manager and director, Milford Badgero as assistant treasurer and Harry A. Abbe as superintendent have been accepted, effective on Sept. 1. On that date C. Loomis Allen will assume the management of the railroad. The offices of assistant treasurer and superintendent are abolished."

Since May 1 Mr. Allen has devoted some time to the railroad's finances, and has prepared the plan of refinancing which was approved by the Public Service Commission on Aug. 8, 1918. The order of the Public Service Commission authorizes the issuance of securities, sufficient to pay off the floating debt, to provide the cash for future improvements and to furnish the treasury with cash for working capital.

Mr. Allen, on Sept. 1, will take offices 500-506 Vinney Building, adjacent to the present office of the Suburban Railroad, and will resume his practice in engineering and management of public utilities.

Peck-Shannahan-Cherry, Inc., have moved their offices to the Syracuse Savings Bank Building. Milford Badgero is a member of the firm.



M. J. Powers has been appointed master mechanic of the Cripple Creek & Colorado Springs Railroad, Colorado Springs, Col., to succeed C. A. McCarthy.

J. J. Cogan, formerly general manager of the Cripple Creek & Colorado Springs Railroad, Colorado Springs, Col., has been elected vice-president of the company.

E. K. H. D'Aeth has been appointed secretary of the Trinidad Electric Transmission, Railway & Gas Company, with headquarters in New York, to succeed A. R. Marshall.

Ralph H. Rice, principal assistant engineer of the Board of Supervising Engineers, Chicago Traction, has been commissioned as captain in the construction division of the army.

Joseph R. Wood has been appointed auditor of the Urbana & Champaign Railway, Gas & Electric Company, to succeed Charles E. Cox, who resigned to enter the automobile business.

L. A. Magraw, general manager and chief engineer of the Macon Railway & Light Company, Macon, Ga., has also been appointed treasurer of the company to succeed J. J. Thames, Jr.

Walter A. Neely, former superintendent of the New Jersey & Pennsylvania Traction Company, Trenton, N. J., is now a first lieutenant with the 111th machine gun company in France.

C. D. Green has been appointed auditor of the Aurora, Elgin & Chicago Railroad, Aurora, Ill., to succeed H. A. Nevans, who retired to accept a position with an insurance company in Chicago.

Frederick J. Pratt, who for the last sixteen years has been storekeeper for the Winnipeg (Man.) Electric Railway, has been made purchasing agent of the company to succeed Mr. J. S. Mackenzie.

U. S. Patillo has been appointed electrical engineer and engineer of overhead construction of the St. Johns Electric Company, St. Augustine, Fla., to succeed W. M. Bidlake and Henry Taylor.

Richard Elliott has been appointed treasurer of the Waterbury & Milldale Tramway, Waterbury, Conn., to succeed R. A. Clark. Mr. Elliott has also been elected first vice-president of the company.

E. J. Knight has been appointed assistant secretary of the Middle West Utilities Company, Chicago, Ill., to succeed O. E. McCormick, who has been appointed assistant treasurer of the company.

W. E. Miller has been appointed general manager of the Cripple Creek & Colorado Springs Railroad, Colorado Springs, Col., to succeed J. J. Cogan, who has been elected vice-president of the company.

C. D. Purkiser, formerly auditor, superintendent and general freight and passenger agent of the Caldwell (Idaho) Traction Company, Ltd., has

been appointed assistant manager of the company to succeed J. L. Magee.

E. O. Rugliss has been appointed auditor of the Bloomington & Normal Railway & Light Company, Bloomington, Ill., to succeed F. J. Larsh, who is now auditor of the Atchison Railway, Light & Power Company, Topeka, Kan.

T. B. MacRae has been appointed auditor of the Chicago, North Shore & Milwaukee Railroad, Highland, Ill., to succeed A. G. Moore, who is now auditor of the Chicago, South Bend & Northern Indiana Railway and the Southern Michigan Railway, South Bend, Ind.

R. H. Howell has been appointed claim agent of the Sterling, Dixon & Eastern Electric Railway and the Illinois Northern Utilities Company, Dixon, Ill., to succeed F. M. Smith, who is now connected with the bureau of safety of the Middle West Utilities Company, Chicago, Ill.

Lawrence Polk, assistant to the general manager of the Winnipeg (Man.) Electric Railway, has been appointed secretary of the Winnipeg, Selkirk & Lake Winnipeg Railway, and assistant secretary of the Winnipeg Electric Railway. Mr. Polk has been connected with the Winnipeg Electric Railway for the last fourteen years.

Richard J. Higgins has been appointed general solicitor for the Kansas City (Mo.) Railways. In such position he will have under his immediate direction and supervision all litigation in which the company is concerned. Judge Higgins has been counsel for the company in Kansas. Clyde Taylor will continue his duties as general counsel.

Thomas J. Connolly has been appointed traffic superintendent of the Trenton & Mercer County Traction Corporation, Trenton, N. J., by Edward J. Peartree, acting general manager. Mr. Connolly has assumed his new duties and will devote his time to directing traffic on the various divisions. He has had thirteen years' experience with the United Traction Company at Troy, N. Y.

Leopoldo Marcenco, chief engineer of the Anglo-Argentine Tramways Company, Buenos Aires, Argentina, is in this country on a short trip of inspection of its electric railway facilities. The Anglo-Argentine Tramways Company is a consolidation of some eight former operating tramways companies in the Argentine capital, and includes a subway as well. Extensions are under consideration, but actual construction will be delayed until the market for materials becomes better.

J. S. Mackenzie, for the last twelve years purchasing agent for the Winnipeg (Man.) Electric Railway, has been appointed assistant treasurer of the company to succeed G. A. Henson. Mr. Mackenzie was formerly with the Toronto (Ont.) Railway. He became connected with the Winnipeg General Power Company in 1902 and remained with that company until 1906, when it was amalgamated with

the Winnipeg Electric Railway. Since that time Mr. Mackenzie has been purchasing agent of the company.

O. J. Gilcreest, assistant to the general superintendent of the Twin City Transit Company, Minneapolis, Minn., in July received a commission as a second lieutenant in the motor truck transportation corps of the marines, attached to the Naval Air Service and was sent to France on very short notice. While studying at the Massachusetts Institute of Technology Mr. Gilcreest specialized on gas engines and it was this special training, along with his general experience, that secured him the position in government service in which he is now engaged.

G. A. Henson, assistant treasurer, has resigned after eighteen years' service with the Winnipeg (Man.) Electric Railway, to take a well-earned holiday. Mr. Henson has been connected with street railway transportation practically all his life. He was first employed by the old horse railway in Winnipeg in 1890. He remained with that company for five years. When the horse cars were superceded by electric cars Mr. Henson went into the insurance business. He became connected with the Winnipeg Electric Railway in 1900 as accountant and three years ago was made assistant treasurer.

James Blaine Walker, secretary of the Public Service Commission for the First District of New York, is the author of "Fifty Years of Rapid Transit," recently published. Mr. Walker has been connected with the commission since its creation more than ten years ago and in the records of that body and its predecessor, the Rapid Transit Commission, has had unusual opportunities open to him for the study of the subject about which he has written. According to Mr. Walker the father of the subway idea was Hugh B. Willson, a Michigan Railway man, who had been in London during the construction of the underground road. Impressed with the workings of the London subway, he conceived the idea of applying the scheme to New York. This attempt failed, but it marked the beginning.

## Obituary

Charles H. Killam, who assisted in promoting the Hanover (N. H.) Street Railway, is dead. Mr. Killam was president of the company for some years before the property was taken over by the Bay State Street Railway.

Thomas S. Morris, the first general manager of the old Trenton Horse Railroad, now included in the system of the Trenton & Mercer County Traction Corporation, Trenton, N. J., died on Aug. 13 at his home in the city of Trenton. He was eighty-three years old.



# Construction News

Construction News Notes are classified under each heading alphabetically by States. An asterisk (\*) indicates a project not previously reported.

## Franchises

**Norfolk, Va.**—The Norfolk Railway & Light Company, which is leased by the Virginia Railway & Power Company, has received a franchise from the Board of Aldermen of Norfolk to construct an extension from the intersection of Granby and York Streets, along York Street to Boush Street, connecting with the present line at Granby and York Streets.

## Track and Roadway

\***Mena, Ark.**—Plans are being proposed for the construction of an interurban electric line from Mena to Hot Springs. H. W. Knight, Chicago, and the Mena Commercial Club are interested in the project.

**San Francisco-Oakland Terminal Railways, Oakland, Cal.**—Operation has been begun on the Chestnut Street branch of the West Eighth Street car line, constructed for the purpose of providing adequate transportation accommodations for the employees of the Moore Shipbuilding Company. A fan-shaped terminal has been constructed at the foot of Chestnut and Adeline Streets. The line cost approximately \$25,000 to build and is partially under the control of the federal government through the organization of the Emergency Transportation Company. Similar terminals will be built at the Alameda plant of the Bethlehem Steel Corporation and the new Liberty shipyards.

**Municipal Railway of San Francisco, San Francisco, Cal.**—Traffic congestion at the foot of Market Street will be relieved by the installation of a third loop for the cars of the Municipal Railway and the United Railroads, instead of by the construction of a subway, according to a tentative agreement reached recently by state, municipal and railway officials at a meeting of the State Board of Harbor Commissioners. The proposed loop which would be constructed outside the present loops, would cost approximately \$12,000. It is planned to divide the cost between the Municipal Railway and the United Railroads.

**Central of Florida Railway, Daytona, Fla.**—Service will be discontinued early in September by the Central of Florida Railway, which operates a line between Daytona, Daytona Beach and Sea

Breeze. The tracks will be torn up and the system dismantled.

\***Hilo (Hawaii) Traction Company.**—A contract has been placed by the Hilo Traction Company with the Honolulu Iron Works for \$20,000 worth of equipment for its proposed electric railway system in Hilo. J. W. Russell, president.

**Detroit (Mich.) United Railway.**—Owing to reduced receipts, the Detroit United Railway has discontinued all construction work under way, including the building of the new Ferndale line to the Ford Eagle plant on River Rouge.

**Michigan Railway, Kalamazoo, Mich.**—An extension will be built by the Michigan Railway from Morrice to Flint.

**Emergency Fleet Railroad, Trenton, N. J.**—The Board of Public Utility Commissioners of New Jersey has approved the proposition of the Emergency Fleet Railroad, a part of the United States Emergency Fleet Corporation, to lease a war emergency trolley line from Gloucester City to Newton Creek in Camden, N. J., to the Public Service Railway for the period of the war and six months after the war. The line will be built and operated by the Public Service Railway, and the Public Service Railway will pay annually 5 per cent of the cost of the road as rental to the leasing company. At the close of the war the Public Service Railway will lease the line for 75 per cent of its cost. The line will provide transportation facilities for workers in the shipyards of the New York Shipbuilding Company at Camden and the Pussey & Jones yards in Gloucester City. The cost of the road will be about \$215,947. [July 20, '18.]

**North Carolina Public Service Company, Greensboro, N. C.**—The North Carolina Public Service Company purposes double-tracking its line from the O. Henry Hotel to the passenger station in connection with the improvement of Elm Street, during the next two or three months. Only a part of this line is now double-tracked. The whole line will be rebuilt.

**Portland Railway, Light & Power Company, Portland, Ore.**—Plans for additional transportation facilities for the shipworkers on the west side of the Willamette are outlined in a report submitted to Acting Mayor Bigelow by F. I. Fuller, vice-president of the Portland Railway, Light & Power Company. These plans are extensive and to carry them out the company will receive assistance from the federal government. Loops for switching cars are planned in connection with the North and South Portland lines at points nearest the South Portland shipyard center and

also adjacent to the industrial center in North Portland, so that the armies of workers may be handled with greater facility. A loop to relieve the congestion on the standard-gauge lines on First and Second Streets is planned on Yamhill Street, so that cars may be looped from Second to First Street.

**Lehigh Valley Transit Company, Allentown, Pa.**—Improvements are being made by the Lehigh Valley Transit Company on its line from Slatington to Slatedale.

**Harrisburg (Pa.) Railways.**—Construction has been completed by the Harrisburg Railways of a new extension to its traction system west of Harrisburg.

**Quebec Railway, Light & Power Company, Quebec, Que.**—It is reported that as soon as estimates are completed showing the materials required, construction will be begun on the proposed extension of the line of the Quebec Railway, Light & Power Company along the Beauport Road, from Limoilou to the city limits. It is also reported that the company will take over the spur line from Mastai Station to Beauport Asylum and operate it in conjunction with its system.

**Dallas (Tex.) Railway.**—Work has been begun by the Dallas Railway on the rehabilitation of its line which serves Highland Park and the Southern Methodist University.

## Shops and Buildings

**Pacific Electric Railway, Los Angeles, Cal.**—A new waiting station will be built by the Pacific Electric Railway at Glendale Avenue and Broadway, Glendale.

**Piedmont & Northern Railway, Charlotte, N. C.**—The passenger station of the Piedmont & Northern Railway at Paris, S. C., was recently destroyed by fire.

## Power Houses and Substations

**Potomac Electric Power Company, Washington, D. C.**—The Potomac Electric Power Company, which is controlled by the Washington Railway & Electric Company, has recently offered through bankers \$2,100,000 in bonds to provide funds for the extension of improvement of its electric generating and transmitting facilities.

**Rutland Railway, Light & Power Company, Rutland, Vt.**—Negotiations have been completed by the Rutland Railway, Light & Power Company with the War Industries Board for the use of the waters of Bomoseen Lake, amounting to approximately 700,000,000 cu.ft. for power purposes.



# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS

FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES • MARKET QUOTATIONS • BUSINESS ANNOUNCEMENTS

## No Rails for Electric Lines

Further Curtailment of Iron and Steel Supplies for Electric Railway Uses Is Expected

The continued reduction in the quantity of steel available for electric railway uses renders the shortage more acute as the requirements of the government for this material increase. The government recently announced that it would require the entire capacity of the steel and iron mills for the next eight months in order to meet its own and the Allies' needs. General Pershing has now called for additional quantities of equipment which will involve a large tonnage of steel beyond the estimates then given.

### GOVERNMENT TAKING ALL RAILS

This increased demand has changed the operating schedules of the mills greatly. Urgent calls have been received from overseas for rails, rolling stock and shell steel and as a result some of these intended for home use may have to be shipped abroad.

Steel mills are rolling some T-rails, but these are mostly 80-lb. and larger sizes, and are rails all being taken by the government. The manufacturers report that they have unfilled orders on their books, some of which are two years old and they still cannot tell when they can fill these orders. Government demands for rolled steel and forged and cast steel products over the second half of this year now amount to 23,000,000 tons, according to Washington reports, and the possibility is that with the additional tonnage needs of the Allies 25,000,000 tons will be wanted. Such a tonnage, however, is entirely beyond the ability of the steel mills to roll this year, but an effort is to be made further to increase the output of crude steel in the next few months and this means also an increase in the output of pig iron. It is hoped to remedy the situation and reduce the shortage of steel somewhat by shutting off all further steel shipments to industries other than those engaged in meeting war needs.

### FEW SPECIAL WORK ORDERS

Special-work manufacturers report that no orders are being received from electric railways except for repair parts, and from properties on which track extensions to government plants, shipyards, camps, etc., are being made or where changes in track are necessary in rerouting cars to accommodate government traffic. These are being filled where the manufacturers have the necessary rail in stock and the

roads have to take what the manufacturers have on hand or else supply the rail themselves. Where roads previously insisted on a particular design of special work they now must take what can be supplied.

Prices are high, but they correspond with the present material and labor costs.

## Car Shortage Decreases Coal Output

Output for the Week of August 17 the Lowest That Has Occurred Since June 22 of This Year

According to the weekly report of the United States Geological Survey dated Aug. 24, the decrease in the total production of bituminous coal, including coal coked which began after the record week of July 13, not only continued during the week of Aug. 17 but the output during that week also fell below 12,000,000 net tons for the first time since June 22. Preliminary estimates place production (including lignite and coal coke) during the current week at 11,910,000 net tons, a decrease compared with the week of Aug. 10 of 379,000 net tons, or approximately 3 per cent, but an increase over the corresponding week of 1917 of 1,597,000 net tons, or 15.4 per cent. The production necessary during the balance of the summer weeks to make up for the past deficit now amounts to 14,275,000 net tons or approximately 21 per cent in excess of the average weekly production during the coal year to date.

Shipments decreased during the week from all districts with the exception of western Pennsylvania, Tennessee, Kentucky, Alabama and the Rocky Mountain and Pacific Coast States. Compared with last year, however, all districts show improvement. The limiting factor during the week was car shortage, the operators reporting a loss of 9.8 per cent of full time from this cause as against 7.7 per cent during the week preceding. Slight improvement is reported in labor conditions and slightly less mine disability existed during the week, while lack of market in the Rocky Mountain district caused slightly greater loss of time than during the preceding week. The mines are reported as being operated at 79.7 per cent of full time as against 82.3 per cent during the week preceding. Operating conditions in the by-product industry and gas plants generally show a slight shortage of by-product coal, causing the plants to be operated at 90 per cent of their present capacity as against 91.5 per cent during the week of Aug. 3.

## New Draft Law and Industry Manufacturers and Railway Companies Want to Know How Its Application Will Affect Their Staffs

Probably before this note is published the new draft law will have been passed and signed by the President. Under it all men between the ages of eighteen and forty-five not now in military service will be subject to call. The selective principle is retained, but the law itself says nothing about classes to be exempted.

The prospective passage of the law has stirred industry as has nothing since the war began. How will the selective principle be applied? Evidently the line will be drawn tighter than ever between the essential and non-essential industries. In other words, the "Work or fight" principle will apply, but in the electric railway and the allied manufacturing industries, which have been recognized as "essential," what effort will the government make to protect itself by retaining in the industries the men who are carrying the burdens of those industries—who furnish the executive brains, the energy and the enthusiasm? A great many of these men are between thirty-five and forty-five. At the same time their abilities have enabled them to accumulate enough to have an independent income if they have no dependents. Needless to say, the withdrawal of these men would be a calamity if it should mean any serious impairment of the industrial or war efficiency of the properties in their charge. This is especially the case if a group of prominent executives should be taken from any one property, either railway or manufacturing.

Certain it is that our industrial structure, under the easiest conditions, must suffer a very considerable alteration; this is to be expected. But the country would be better off if business men can be informed quickly of the government's policy. Certainty should succeed uncertainty as quickly as possible. Only so can preparations be made for taking care of our industrial enterprises. The time for adjustment is all too short in any event.

A general policy needs to be declared. If interpretation is left to the local draft boards, the results to the industries and the government may be serious.

So far the government has applied the selective draft principle intelligently. The confidence created in the government and in the Secretary of War should be retained by a frank declaration from the Secretary to the business men of the country at once.



## Inquiries for Rolling Stock Increase

Roads Need Additional Equipment and with Reasonable Delivery Many Orders Would Be Placed

Inquiries made of car builders regarding the car situation in the West indicate that inquiries for additional cars have been quite numerous recently and have increased decidedly as compared with the latter part of last year and the first four months of this year. Manufacturers report that the present demand exceeds the supply. This, of course, is not due to the large number of cars being purchased, but can be directly attributed to the large amount of government work now going through the various plants. Judging from the number of inquiries received for new equipment, it appears that the purchase of electric traction rolling stock will increase from now on. Many roads need additional equipment and owing to the increased fare which has been allowed some will buy that otherwise could not afford to do so.

It is interesting to note the almost spontaneous recognition of the "one-man" car in the Middle West, West and Southwest. One manufacturer states that fully 90 per cent of this year's inquiries for city cars has been for the "one-man" unit. Car builders feel that the merit of the one-man unit is now absolutely proven and generally admitted. After the war the demands on the car builder are sure to be very heavy and it would not be surprising to see several thousand one-man cars purchased within a very short time after the conclusion of the war.

The impression conveyed by these inquiries indicates that the outlook is exceedingly bright, and if material could be obtained promptly the car builder with the necessary man-power and capacity would be kept very busy.

## Locomotive Manufacturing Facilities to Be Increased

At a meeting of representative locomotive builders this week with Bernard M. Baruch, chairman of the War Industries Board, and other officials of the board, the Railroad Administration and the government departments, plans were worked out whereby the output of the American locomotive manufacturing plants will be doubled. The increase is from more than 3000 on a pre-war basis to more than 6000 completed machines. An equitable distribution of the output to meet the military needs in France and the needs of the Railroad Administration for the steam roads of the United States has been provided by the chairman which has met the approval of the officials.

Among those attending the meeting were Samuel Vaucain, of the Baldwin Locomotive Company; Mr. Fletcher, president of the American Locomotive Company; Mr. Lassiter, general manager of the American Locomotive Company; Colonels Tyler and Wright, of

the Army Engineers Corps; Assistant General Manager Hines, Director of Operations Gray and Director of Railroad Equipment J. R. Flannery, of the Railroad Administration, and Henry Rea, of the Committee on Munitions and Plants.

## Sawdust-Bricks for Fuel

Sawdust bricks for fuel are just now receiving close attention at the Forest Products Laboratory of the State University. The shortage-of-coal problem, which threatens to inflict itself upon the country next winter, has caused a revival of interest in the possibilities of successfully briquetting sawdust and shavings so they will compete commercially with other fuels, and thus aid in the relief work which may become necessary.

In the past such processes have been successful so far as heating qualities were concerned, but have been rather too expensive, so that there is no established industry of the sort in the United States at the present time.

The usual method of compressing sawdust into briquettes is by the aid of pitch or tar as a binder in suitable machines. At one time machines were used in the West in which, instead of a pitch binder, string was wrapped around the briquette, and held the sawdust in shape until it was used for fuel.

## Jobbers in Electrical Goods on Preferential List

The War Industries Board authorizes the following:

At a hearing before the Priorities Commissioner and other representatives of the War Industries Board, the war service committee representing electrical jobbers presented their claims for preferred treatment to maintain their stocks for general distribution.

As a result of the hearing the Priorities Commissioner announced that manufacturers of electrical apparatus and supplies will be accorded a degree of preference for their materials to enable them to operate, conditioned upon their pledging themselves to limit their output to essential products and undertake to see that such products are devoted solely to essential uses as that term may be defined from time to time by the Priorities Division. The manufacturers must be relied upon to police their own industry and also in a measure to police jobbers.

It is believed to be in the public interest that jobbers should be permitted to maintain reasonable stocks from which government agencies, war industries and the civilian population may draw for their necessary essential requirements, provided that the jobbers will pledge themselves rigidly to restrict the use of all stocks to solely essential uses and to reduce to an absolute minimum both jobbing and retail stocks. The jobbers will be relied upon to police their own industry and that of the retailers. Any jobber or retailer violating the pledge will be cut off from procuring further supplies.

## Packing Goods for Export Needs Attention

The Large Amount of Handling Necessary Makes It Imperative to Use Stout Shipping Cases

Special Agent S. W. Rosenthal, in an article published in *Commerce Reports*, says that too much care cannot be used in packing goods for some interior points in South America as revealed by a brief description of the handling they undergo in a trip from New York to La Paz, Bolivia. As an illustration, twenty-five cases of envelopes were loaded on a truck in New York and unloaded at the steamship pier. They were then placed on board the steamship and unloaded at Colon, Panama. They were re-embarked on a steamer at Colon and transferred to a launch at Mollendo, since there are no piers at this port. They were taken on shore from the launch, transferred to hand-carts, and taken to the railroad station. They were placed on a freight car and unloaded at Guaci, Lake Titicaca. At Guaci they were placed aboard a steamer and taken to Puno; here they were unloaded from the steamer and placed on the railroad cars, which transferred them to La Paz. At La Paz they were carried by Indians to the customer's warehouse.

It is obvious that if merchandise is to be received in La Paz in satisfactory condition the packing must be done with special care. Both merchants and custom-house brokers report that the best preventive for damage and rifling is to pack the merchandise in a stout shipping case, nail metal edging around the ends and finally paint the edging so that it will show marks if tampered with. This, they report, makes a fool-proof shipping case.

The marking of cases must also be plain and large enough to be easily made out in the hold of a ship.

## Rolling Stock

Rock Island Southern Railroad, Monmouth, Ill., is reported to have lost several cars in a fire which destroyed the company's power house and shops at Cameron, Ill.

Laconia (N. H.) Street Railway has ordered two one-man safety cars from the American Car Company, St. Louis, Mo. These cars are of the standard double-end Birney type.

The City of Seattle, Wash., has purchased from the Twin City Rapid Transit Company, Minneapolis, the twenty-five second-hand double-truck cars for which it was in the market.

Hammond, Whiting & East Chicago Railway, Chicago, Ill., is in the market for ten new cars. The order is before the United States Housing Corporation for approval. The corporation will finance improvements of approximately \$325,000, including cars and 2 miles of new track for the transportation of munitions workers.



Kansas City (Mo.) Railways has secured fifteen cars for one-man operation from the American Car Company. They are to be delivered in ninety days. The cars are part of a lot ordered by an Eastern company which has released them. The total cost is about \$100,000.

The Connecticut Company, New Haven, Conn., has been granted permission by the Public Utilities Commission to operate twenty-one one-man cars. These will be used on one or more "jigger" lines and, according to the local papers, the street carmen's union will interpose no objection to their use.

Washington-Virginia Railway, Washington, D. C., has applied to the Capital Issues Committee at Washington for authority to issue and market \$420,000 of short-term equipment notes to provide fifty new cars for the Mt. Vernon & Camp Humphries Railway, an extension of 4 miles which is being completed from Mt. Vernon to Camp Humphries, Va. The roadbed and track are nearing completion, and it is expected that the new line will be ready for use some time in September. Anticipating approval of the application, the contract for the cars has been awarded.

**Trade Notes**

Metal & Thermit Corporation, New York, N. Y., announces that the Toronto office of the company has been moved to 15 Emily Street, Toronto, Ont.

H. L. Lewrabey, estimating and efficiency engineer, St. Louis Car Company, has become a member of the central bureau staff, Division of Planning and Statistics, War Industries Board, with headquarters at Washington.

Walter A. Zelnicker Supply Company, St. Louis, Mo., has recently added to its sales force Henry Stroh. For the last ten years Mr. Stroh has been connected with the Elliot Frog & Switch Company. Prior to that he was associated with the Republic Iron & Steel Company, East St. Louis. The Zelnicker Company has also recently secured the services of Merle G. Peterson, who is now connected with the company's Chicago sales force at 428 First National Bank Building. Mr. Peterson was formerly associated with the Niles-Bement-Pond Company and Pratt & Whitney Company.

**New Advertising Literature**

Wheeler Condenser & Engineering Company, Carteret, N. J.: Bulletin 112A, entitled "Condensers, Pumps, Cooling-Towers, etc.", 32 pages, descriptive of the products along these lines of the manufacturers.

Pittsburgh (Pa.) Glove Manufacturing Company: A catalog describing and illustrating its high-tension glove. These gloves consist of a tough extra-flexible rubber of great strength, of

high dielectric properties, protected by genuine horsehide gloves, according to this bulletin. The two permit free and unrestricted use of the hands.

Mica Insulator Company, New York, with works at Schenectady, N. Y.: A bulletin entitled "The Insulation of Commutators," containing facts relative to this subject and a discussion of insulation in general. Early methods of insulation are also discussed and a résumé of the invention of "Micanite" is given. Mica films, cement content of Micanite and the different kinds of mica plate are also treated of. The characteristics of "Micamite," including its uniform thickness and density, high specific weight, extremely low compressibility, very small cement content and large area of individual mica films, are also outlined.

St. Louis Frog & Switch Company, St. Louis, Mo.: A 280-page indexed catalog, 5 in. x 7 in., with semi-flexible cover, containing much valuable information for electric railway maintenance of way engineers. The first part of the volume is devoted to general information, diagrams, definitions and dimensions pertaining to switches, crossings frogs, switch stands, track elevation, standard rail sections, ties, bolts, spikes, curving of rails, decimal equivalents, etc. The remainder of the book includes a chapter treating extensively by the aid of many diagrams each of the following subjects: Frogs, Switches, Crossings, Special Track Work, Switch Stands, and Track Work for Industrial Railways.

**NEW YORK METAL MARKET PRICES**

	Aug. 21	Aug. 28
Copper, ingots, cents per lb.	26	26
Copper wire base, cents per lb.	29.25	29.25
Lead, cents per lb.	8.05	8.05
Nickel, cents per lb.	40	40
Spelter, cents per lb.	9.12½	9.00 to 9.25
Tin, Chinese, cents per lb.	90 to 90.5	90 to 90.5
Aluminum, 98 to 99 per cent., cents per lb.	†33.00	†33.10

\* No Straits offering. † Government price in 50-ton lots or more, f. o. b. plant.

**OLD METAL PRICES—NEW YORK**

	Aug. 21	Aug. 28
Heavy copper, cents per lb.	24.00	23.50 to 24.50
Light copper, cents per lb.	20.50	20 to 21.50
Red brass, cents per lb.	21 to 22	22 to 23
Yellow brass, cents per lb.	13½ to 14½	13½ to 14.50
Lead, heavy, cents per lb.	7.00	7.50 to 7.75
Zinc, cents per lb.	6.00	6.75 to 7.00
Steel car axles, Chicago, per net ton	\$41.52	\$41.52
Old carwheels, Chicago, per gross ton	\$29.00	\$30.00
Steel rails (scrap), Chicago, per gross ton	\$34.00	\$34.00
Steel rails (relaying), Chicago, gross ton	\$60.00	\$60.00
Machine shop turnings, Chicago, net ton	\$16.25	\$16.25

**ELECTRIC RAILWAY MATERIAL PRICES**

	Aug. 21	Aug. 28
Rubber-covered wire base, New York, cents per lb.	30 to 37	30 to 37
Weatherproof wire (100 lb. lots), cents per lb., New York	32.40	32.40
Weatherproof wire (100 lb. lots), cents per lb., Chicago	35.00 to 37.72	35.00 to 37.72
T rails (A. S. C. E. standard), per gross ton	\$70.00 to \$80.00	\$70.00 to \$80.00
T rails (A. S. C. E. standard), 100 to 500 ton lots, per gross ton	\$67.50	\$67.50
T rails (A. S. C. E. standard), 500 ton lots, per gross ton	\$62.50	\$62.50
T rail, high (Shanghai), cents per lb.	4½	4½
Rails, rdger (grooved), cents per lb.	4½	4½
Wire nails, Pittsburgh, cents per lb.	3½	3½
Railroad spikes, drive, Pittsburgh base, cents per lb.	4½	4½
Railroad spikes, screw, Pittsburgh base, cents per lb.	8	8
Tie plates (flat type), cents per lb.	*3½	*3½
Tie plates (brace type), cents per lb.	*3½	*3½
Tie rods, Pittsburgh base, cents per lb.	7	7
Fish plates, cents per lb.	*3½	*3½
Angle plates, cents per lb.	*3½	*3½
Angle bars, cents per lb.	*3½	*3½
Rail bolts and nuts, Pittsburgh base, cents per lb.	4.90	4.90
Steel bars, Pittsburgh, cents per lb.	5	5
Sheet iron, black (24 gage), Pittsburgh, cents per lb.	4.90	4.90
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.	5.80	5.80
Galvanized barbed wire, Pittsburgh, cent per lb.	4.35	4.35

	Aug. 21	Aug. 28
Galvanized wire, ordinary, Pittsburgh, cents per lb.	3.95	3.95
Car window glass (single strength), first three brackets, A quality, New York, discount†	80%	80%
Car window glass (single strength, first three brackets, B quality), New York, discount	80%	80%
Car window glass (double strength, all sizes AA quality), New York discount	82 & 3%	82 & 3%
Waste, wool (according to grade), cents per lb.	11½ to 22	11½ to 22
Waste cotton (100 lb. bale), cents per lb.	13 to 13½	13 to 13½
Asphalt, hot (150 tons minimum), per ton delivered	\$38.50	\$38.50
Asphalt, cold (150 tons minimum, pkgs. weighed in, F. O. B. plant, Maurer, N. J.), per ton	\$42.50	\$42.50
Asphalt filler, per ton	\$45.00	\$45.00
Cement (carload lots), New York, per bbl.	\$3.20	\$3.20
Cement (carload lots), Chicago, per bbl.	\$3.34	\$3.34
Cement (carload lots), Seattle, per bbl.	\$3.68	\$3.68
Linseed oil (raw, 5 bbl. lots), New York, per gal.	\$1.86	\$1.86
Linseed oil (boiled, 5 bbl. lots), New York, per gal.	\$1.88	\$1.88
White lead (100 lb. keg), New York, cents per lb.	10½	10½
Turpentine (bbl. lots), New York, cents per gal.	63	63

\* Government price. † These prices are f. o. b. works, with box'ing charges extra.