

# Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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## Any Car Any Time for Any Distance

ELSEWHERE in this issue is an account of nearly two years' operation of the unlimited ride, \$1 weekly pass at Racine, Wis. When this plan for increasing off-peak riding was first broached, it was assumed by some to be a revival of the European style pass, while others were skeptical about a form of selling transportation that left no tangible record.

As regards the latter point, the experience of the Racine division of the Milwaukee Electric Railway & Light Company indicates that it was not even necessary to continue recording pass presentations on the former transfer registers. With two special surveys made more than a year apart, showing the average number of rides per business day per pass holder to be slightly less than four, it seems proper to assume that the average number is so steady that multiplying pass-holders by four will give a reasonably correct figure for the average number of daily revenue rides taken by them. This holds at least for the towns of the size of Racine and Kenosha where a thorough knowledge of ride-making conditions is possible.

As regards the former point, this pass is not the same as the European kind because it is necessary in Racine for a pass holder to be better than a compulsory twice-a-day rider in order to save by its use. The figure of average rides quoted above shows that this principle has been effective. While the pass-holder pays only 4 cents per ride he gives the company 16 cents per day, which is more than would be likely to be realized from either cash or ticket riders. No one can say how much more revenue has come to the railway through the pass, but from Mr. Jackson's account it is apparent that the pass has definitely helped to better safety car operation, to improve off-peak riding and to foster the welcome habit of taking any car any time for any distance.

## Changes in Taxation Could Well Be Made

THE recommendations of Secretary Mellon to eliminate the higher surtax rate if carried into effect should be of help to all utilities and other issuers of investment securities. It is a well known fact that these higher surtax rates have been so high in the past as to defeat their own purpose. If the rates for large incomes were lower, the holders of those incomes could again afford to invest in public utility bonds rather than the tax-exempt issues of cities, counties and states.

Of course, the clean cut thing to do as a basis of any logical taxation system is to provide that no more tax exempt securities be issued—that the income from all classes of securities be treated alike. The McFadden resolution, now before Congress, proposing a constitutional amendment to that effect should be supported and pushed to an early adoption. But such things take time and meanwhile revenues must be collected and the best immediate moves must be determined.

The recommendation of Secretary Mellon that the transportation tax be cut in half should be of help to the interurban roads as well as trunk roads. On the other hand, his suggestion that the normal income tax be increased to 15 per cent would affect many companies adversely, and the suggestion sometimes made that a special tax be laid on undistributed income would affect electric railway companies still more.

The fact is, as President Gadsden pointed out recently before a committee of Congress, the conditions under which public utilities operate are so different from those which apply to most other corporations as strongly to suggest the advisability that for taxation purposes they should be in a class by themselves. Their rates, return and most of their expenses now are regulated by law; in taxation only are they put in a class with other companies. This is an anomalous condition and its correction can well be considered by our legislators.

## Efforts to Preserve Proper Financial Balance

PRACTICAL application is about to be made by the North American Company of the theories of finance stressed by Lucien H. Tyng, chairman of the sub-committee of the American Bankers' Association, in the interim report made recently entitled "The Importance of Adequate Junior Financing." Mr. Tyng quoted an elaborate compilation covering a period of fifteen years to prove a combined note and bond financing among utilities of 79.18 per cent and a combined stock financing of 20.19 per cent as against a theoretically correct fifty-fifty. He said that it served no useful purpose simply to say that the companies must do more junior financing and that the time to avoid any responsibility for reorganization was when dangerous tendencies became evident and before disaster has happened. Thus he stressed points also made by F. K. Shrader before the American Electric Railway Association at its meeting last winter, at which Mr. Shrader, an investment banker, warned against a continuation of the tendency of the past to borrow money rather than to sell share capital.

This is the warning that the North American Company is heeding under the plan for the readjustment of its capital outlined in a recent issue. In this particular case there was no need for immediate concern for the financial future of the company, but there was honest realization on the part of the directors of the fact that continued exclusive use by subsidiaries of bonds and notes to finance the cost of added facilities tends in time to produce a financial structure top-heavy as regards debts, and to impair the credit of the parent company and its subsidiaries. It is an interesting change, this division of the \$29,793,300 stock, all common, of the North American Company into even parts of common and of 6 per cent preferred, with the new preferred ranking as an investment issue and the new common as an issue with prospects of participation in

the profits to a degree that should hold it near par. No less interesting in its way than this change is the announcement of the offering of \$3,000,000 of 8 per cent preferred stock over the counter by the Milwaukee Electric Railway & Light Company, for the same principles of finance are involved. The cost of the money to the company may be a trifle higher under the present plan than would have been the case had resort been had to the issuance of bonds or notes, but then a redemption privilege has been inserted in the stock that may prove very valuable in the future as the practice in the past with the bond offerings has been to make them non-callable.

By the new issue of stock in Milwaukee the proportion of bonds and other secured obligations to stocks outstanding has been changed for the better on that property because of the arrangement wherein the secured debt stands at \$37,532,000 contrasted to \$17,350,000 of stock, composed of \$7,500,000 of preferred and \$9,850,000 of common. These are not the theoretically perfect proportions advocated by Mr. Tyng, but they are an approach toward them that cannot but be helpful to the company.

### Brains Plus Machines Are Cheaper than Muscle

A VISITOR to the Youville Shops of the Montreal Tramways a few years back, say early in 1914, would probably have pronounced the equipment and practices to be about right. The buildings were modern, the layout was good, and while few of the machines were new they were all in good condition. The fact that much progress has been made recently at Youville, however, is disclosed by an article in this issue, which tells how costs have been controlled through a complete analysis of shop operations.

Fortunately for Canada, the tramways shops were so well organized that when the war broke out they were able to take on a huge job of shell-making, which was completed with the same dispatch that is expected of a concern regularly engaged in manufacturing. This, of course, required a supplemental force of men and additional machinery, but the *esprit de corps* which was behind the shell work done for the government was the regular spirit of the shops, intensified by patriotism. The stimulus of the war work, added to the necessity for economizing in materials and labor, was a contributing factor to the improvement in shop methods outlined in the article.

This improvement has been wrought through close attention to detail, to individual operations. Take, for example, lifting, which was seen to be a time and energy consumer, and which afforded an attractive opportunity for saving. Lifting was minimized by the simple expedient of keeping heavy pieces on as nearly the same level as possible. Lost motion in transferring pieces from place to place was also eliminated by careful routing and loss of effort through unfamiliarity of men with jobs was reduced. And, not least in importance, reclamation work was systematized to the limit.

The Montreal Tramways has been doing only what other railways in Canada and the United States have been forced or impelled to do under stress of the same conditions. It does not pose as a model; in fact, the information in this week's article was obtained entirely on the initiative of this paper. At the same time it is only fair to say that the principles so well exemplified at Montreal have wide application. The results secured

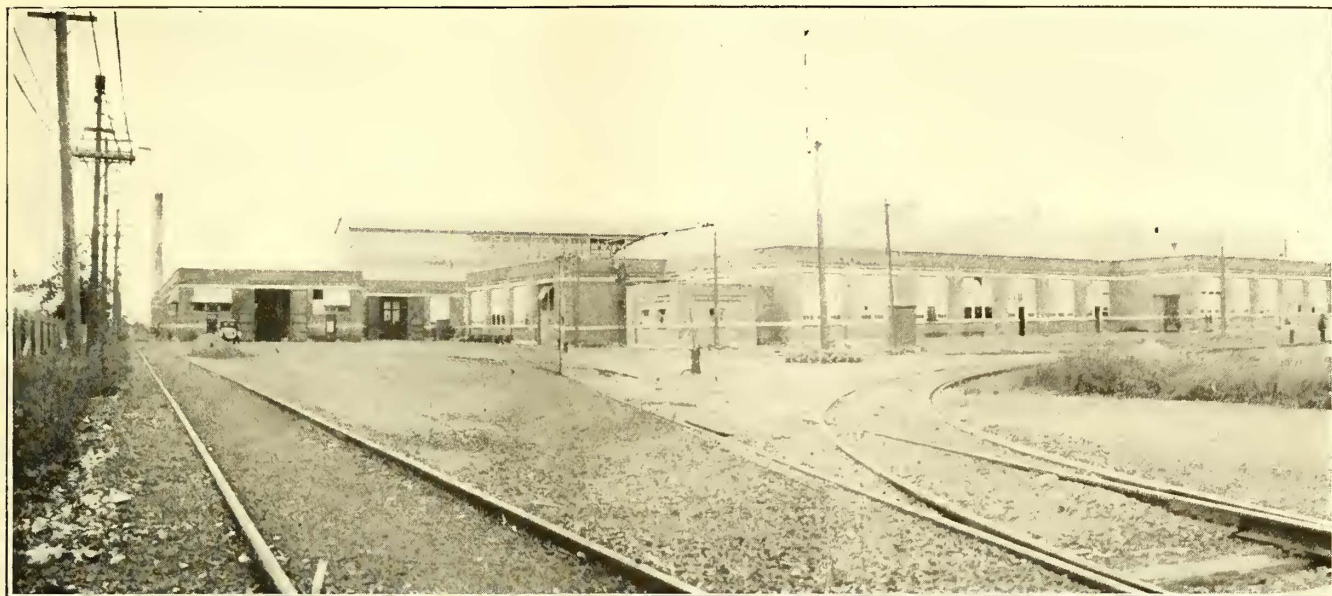
there show what concentration on the fundamentals and the resulting judicious use of machinery will do in cutting out waste in the shop.

### Two Opposing Policies Separated by a Few Miles

THE eyes of the electric railway industry are now focussed in an all-absorbing manner on the situation in Detroit where municipal ownership is making miraculous headway both in respect to the growth of its physical property and its popularity with the public. Such being the case, a rather unique circumstance in regard to public ownership is of particular interest. On June 4 there were quoted in this paper several paragraphs from an article in the *Saturday Evening Post* written by a "country banker." He tells how a certain city, undoubtedly St. Petersburg, Fla., took over the dilapidated rolling stock and plant of the railway operating there after it had become bankrupt. The transition was quick and simple. The city fathers picked their operating staff and the new manager was allowed to proceed unbridled by his superiors and unmindful of the customary financial restrictions and the economies of the problem. He promptly junked all old equipment and purchased new, and generally revamped the property according to his own idea of adequacy. Our observer relates that the fare is 5 cents and a very satisfactory service is maintained. However, his inquisitiveness failed to be aroused to the point of learning what return on the capital a rigid system of bookkeeping would show. But why worry about such an inconsequential detail if the local riders are boastful of their service? Their ignorance that the final reckoning is in the tax rates merely adds another confirmation to the truth that some of the people can be fooled all the time.

Here is the flagrant inconsistency. A luring opportunity exists in Miami, on the coast of Florida, to secure a liberal franchise for the operation of a railway there. The Chamber of Commerce and all other civic bodies, as well as the City Council, are extremely anxious to have someone look into the proposition. They will gladly assure their assistance in getting a franchise without restrictions as to rates, paving of streets or other outside expenses. There are already in place 5 miles of track which can be secured at a price considerably under reproduction cost. These two cities, comparable as to permanent and transient residents, certainly are at wide variance as to solution of their respective transportation problems.

Is one a case of optimism and over-confidence and the other of perhaps adequate detailed study? The guess might safely be hazarded that the Miamians are not the only ones to have investigated with thoroughness the proposition, for as yet no takers have been reported. What seems so strange is that two cities, located so close to each other, should decide upon such opposed methods of operation. It might pay those in whose hands the direction of Miami's municipal affairs rest to direct their efforts toward "selling" the natives on their becoming the owners of this promising property. Nevertheless, the potent question suggests itself: What are the characteristics and virtues of public operation and ownership that mark it as apparently a desirable condition in one place and exclude it from consideration as a solution in a neighboring city? Perhaps the balmy air of Florida is not conducive to consistency.



PANORAMIC VIEW OF THE MAIN SHOP BUILDING

## Cutting Out Waste in the Shop

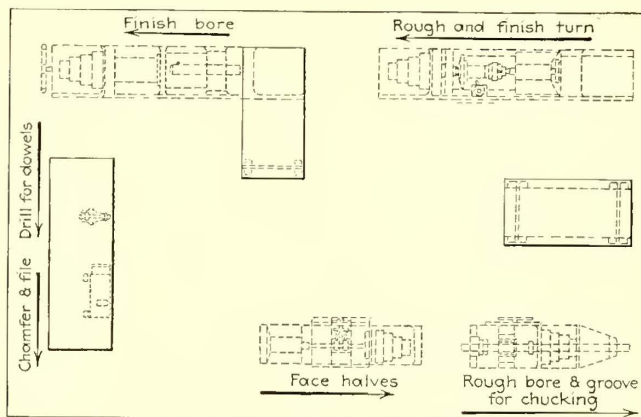
**Montreal (Que.) Tramways Has Well-Equipped Shops Which Were Utilized for War Work—Salient Principles Applied in Maintenance Practice Are Minimizing of Lifting Operations, Effective Routing of Machine Jobs and Permanent Repair of Defective Parts**

**I**N ITS shops at Youville the Montreal Tramways possesses unusual facilities for maintenance work on rolling stock. These shops were described in the issue of this paper for July 11, 1914, page 60, but since they were built many improvements in details have been made. The panoramic view reproduced shows the general appearance of the front of the main buildings, while the outline drawings give the present layout of machines for finishing axle bearings.

The manufacturing possibilities of the shops were so good that the Canadian government utilized them during the war for shell manufacture, and about 80,000 each of 6-in. and 8-in. H.E. shells of fine quality were turned out. This involved the installation of much new machinery, some of which was made a permanent part of the shop equipment after the war contracts were completed. All of this war work was under the direction of D. E. Blair, superintendent of equipment and shops, in addition to his regular duties.

In all of the maintenance work the aim is to prevent recurrence of defects by replacing worn and broken parts with others of more substantial nature, as will be illustrated in the present article. Climatic conditions make this unusually necessary, as the effects on the paving of freezing and thawing are severe. Each spring there is an epidemic of motor frame breakages due to this cause, an especially bad season resulting in a crop of 250 or more motor frame breakages during the winter. This condition also causes the breakage of a very large number of truck frames. By co-operation with the track department this trouble is being attacked at the root, while more economical repair and maintenance methods are being introduced in the shop.

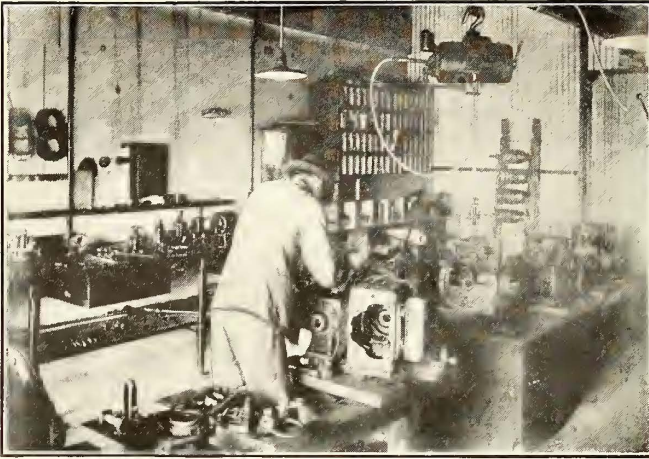
One of the most notable recent improvements in maintenance procedure has been in the handling of supplies, particularly in collecting parts of equipment from the carhouses and in furnishing overhauled parts. This is



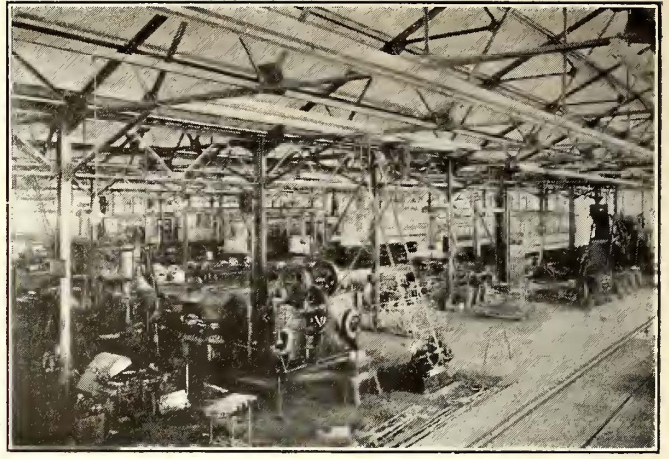
ROUTING DIAGRAM FOR FINISHING AXLE BEARINGS

done with one supply car, manned with a crew of two, who are reinforced locally at the carhouses by two additional men. In a working day of nine hours this car visits all of the five carhouses on the property, whereas until the present routine was adopted two cars, for twelve hours per day, were required. The car is loaded up to about 20 tons on each trip. It also handles all incoming mechanical department stores from down town to the shops.

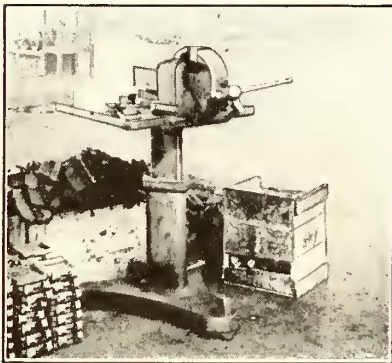
This supply car is shown in one of the illustrations. (See also issue of this paper for Jan. 10, 1914, page 88.) One feature is the gib crane of 3,000-lb. capacity, operated by a small electric motor which is effective in handling wheels, etc., and which has a working radius of 12 ft. The supply compartments are also notable, particularly those for armatures. These are on the floor level and have covers hinged at the bottom so that they can be used to support the armatures in a convenient position for attaching the chain hooks of the air hoist suspended from an I-beam running above the wall racks



WHERE THE AIR COMPRESSORS ARE MAINTAINED AND TESTED

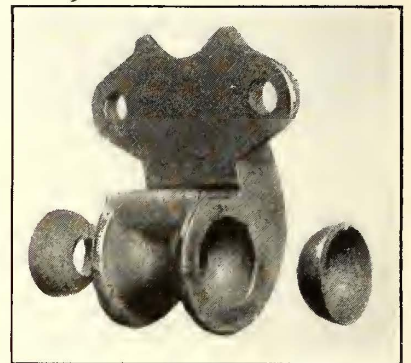


CARS AND MACHINES IN THE GENERAL OVERHAUL SHOP

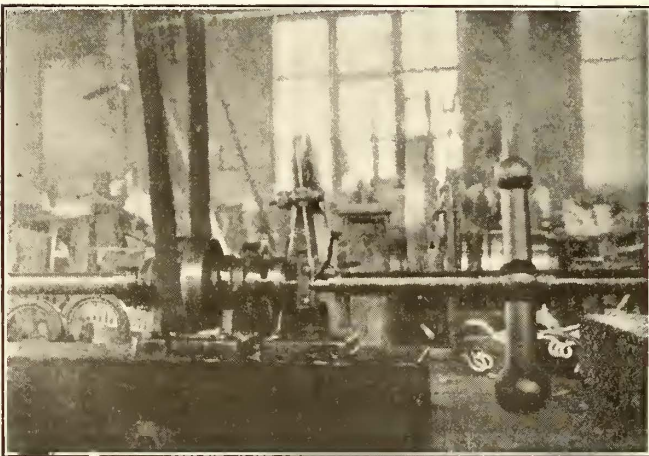


PORTABLE VISE BENCH FOUND USEFUL AROUND THE SHOPS

**Careful Arrangement  
of Shop  
Machinery and Equipment  
Has Marked Effect  
on Quality of  
Maintenance Work  
Produced**



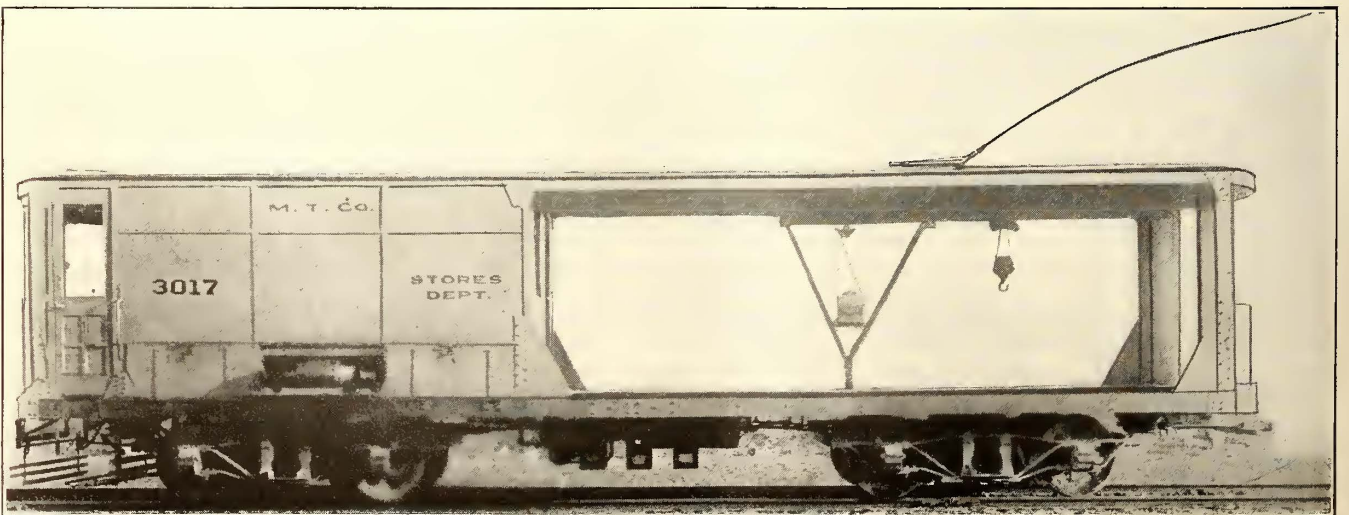
BRAKE HANGER SOCKET CASTING WITH DISHED LINERS



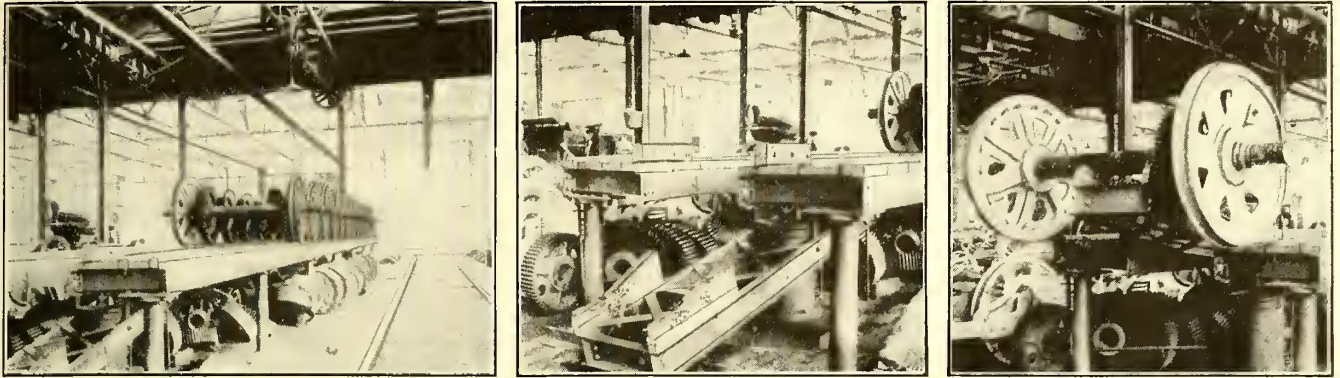
HOME-MADE WINDING MACHINE FOR HEATER COILS



A "STILL LIFE" VIEW IN THE WOOD MILL



THE SUPPLY CAR WHICH VISITS ALL CARHOUSES ONCE A DAY



THE WHEEL AND AXLE STORAGE AND LOADING PLATFORM ALONGSIDE THE SUPPLY CAR TRACK

At left—General view of the platform. In center—The lift in position ready to be loaded.  
At right—Wheels and axles raised and ready to roll along the platform.

in the carhouses. Thus the armatures are handled from the carhouses to the winding stands and returned to the pit jacks in the carhouses without running any chances of being damaged by being rolled over floors.

A loading platform for wheels has recently been built in the wheel shop. It merits more than passing notice due to the reduction which it has made in the cost of handling wheels. Several pictures are reproduced to show the details. The main purpose of this platform is to permit storing of wheels on the axles on the level of the floor of the supply car. Incidentally it provides a space underneath for the storage of gear cases, etc. It is a time saver in eliminating a comparatively slow lift by the supply crane, the saving amounting to from thirty to forty-five minutes per day.

The platform is mounted on a steel underframe of channel sections with columns of 6-in. pipe terminating in flanges top and bottom. At one end is an air-operated lift consisting of a rectangular frame of channels, latticed to stiffen it and hinged to the platform underneath at a distance of several feet back from the end. At

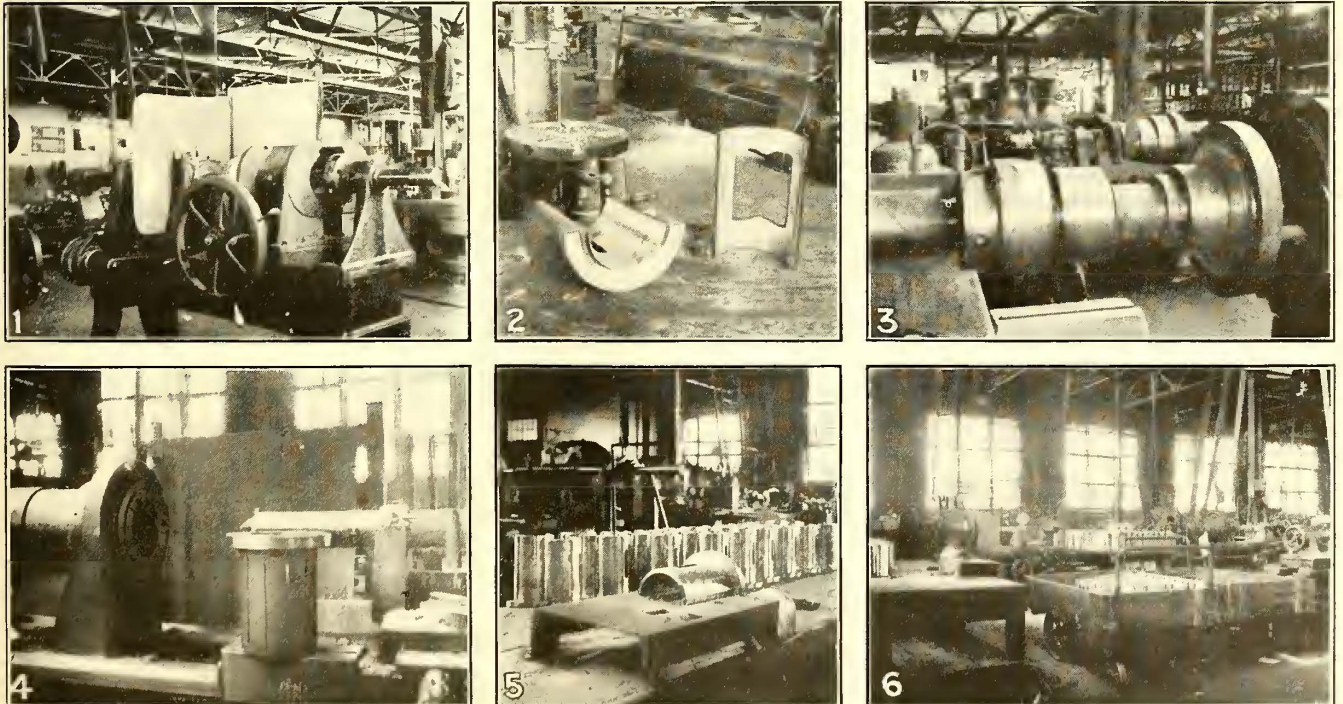
the outer end of the lift crane is a cradle made of two wood blocks, curved slightly on the upper surfaces to prevent the axle from rolling off until the lift has been raised sufficiently to permit the wheels to roll down the strap rails laid on the platform.

The lift is raised and lowered by means of a cylinder removed from an old bulldozer, with a control lever mounted alongside the lift and connected with the valve on the cylinder by means of a rod visible in one of the pictures.

On the platform are two sets of rails, offset so that the wheels and axles will be staggered to economize space.

RECLAMATION WORK IS WELL SYSTEMATIZED

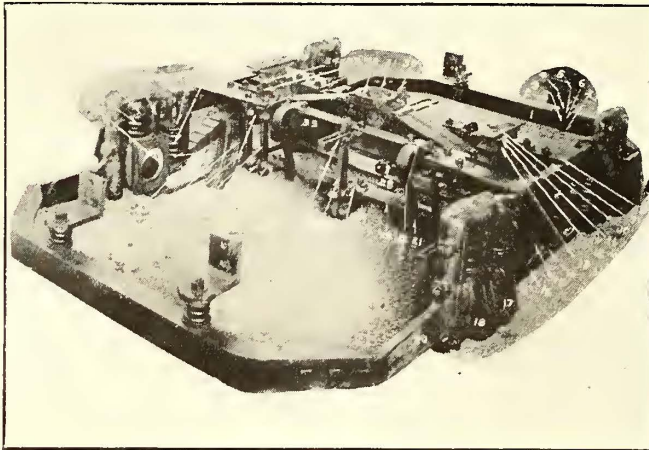
Very little material goes to the junkman from the Youville shops which offers any possibilities in the way of economical reclamation. Reclamation work is handled here according to a manufacturing-type program designed to incorporate simplicity, thoroughness and common sense.



STEPS IN THE OPERATION OF FINISHING A BEARING

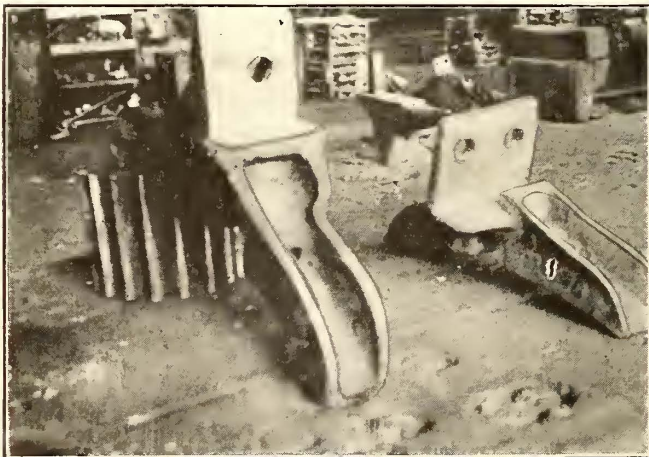
1. Boring mill for rough boring and grooving. 2. Halves of bearing rough bored and grooved. 3. Mandrel for holding bearing for rough and finish turning. 4. Chuck, boring bar and chuck

bushing for finished boring and end chamfering. 5. Grinding machine for inside chamfering. 6. General view of bearing section, with trucks in foreground.



TRUCK PHOTOGRAPHS ARE NUMBERED TO PERMIT EASY IDENTIFICATION OF THE PARTS

The reclamation work "heads up" in the reclamation storeroom, entirely separate from the new materials storeroom. In charge of this is a specialist, who also has charge of the supply car. He is the general right-hand man to the shop foreman and is more than a mere stockroom clerk because he initiates changes in stock standards as necessary. All used material sent in from the carhouses is received here even if it is apparently of no further use. That which is fit for repairs or reclamation is distributed for repairs and checked off against the department to which it was sent. That which seems to be only fit for the scrap pile is brought to a central weigh scale, where it is further examined by a competent mechanic, who selects pieces that will serve for raw material or which can be put to further use for other purposes. The real scrap is then weighed according to account classification, so that each account receives proper credit. It is then loaded onto a suitable truck for conveyance to the stores scrap bins, where it is sorted and sold according to scrap market classification. Credit is thus given each account daily. Brass and copper scrap after being weighed is received daily by the stores department in locked containers and delivered to the contracting brass foundry by the carload at suitable intervals. Requisitions for supplies from carhouses are sent direct to this department and are filled as far as possible from reclaimed stock on "No Charge" invoices. Written requisitions are then forwarded to the stores department for new supplies. All work done on general repairs and reclamation is



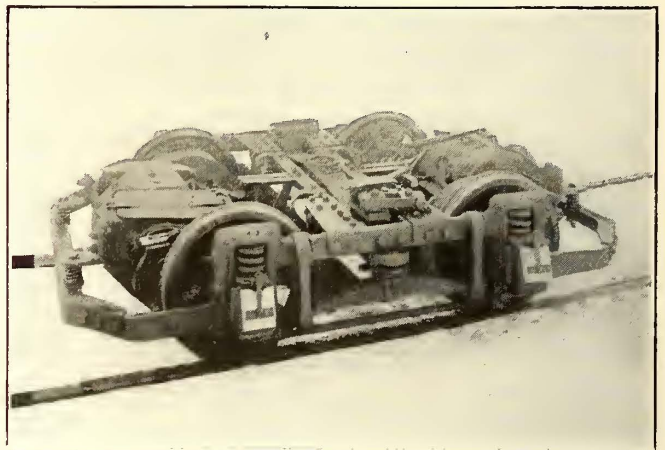
BRAKE HEAD SHOWING FINISHED SURFACES WHICH MAKE CONTACT WITH BRAKE BEAMS

charged direct to the operating account affected as the work is being done. An interesting feature of this department is a series of classified bins in which are collected various small O.K. parts of damaged and scrapped apparatus. These are easily located and used to good advantage in the manufacture of new parts on manufacturing orders, all material for which is collected and issued by the material clerk.

#### BEARING WORK INVOLVES INGENIOUS OPERATIONS

One of the most interesting sections of the shops is that devoted to bearings. This work is routed in accordance with the plan shown in an accompanying sketch. The machines involved are so placed that the work goes around the four sides of a rectangle, and trucks of convenient height, shown in a picture reproduced, are used to carry the raw material to the machines and the finished material back to stores. Tables are located between machines so as to eliminate all handling between machines. The steps in the work, which is a contract job, are as below:

1. The halves of the bronze bearings are first surfaced on the flat faces in a shaper at present, but a change-over to a milling operation is under way because a stout lathe left over from war work is available for this job.



A REMODELED TRUCK SHOWING WOOD COVERS OVER JOURNAL BOXES

2. Next comes a rough bore in a special boring machine in which the halves of the bearing are held in a stout clamp on a carriage sliding on the bed and controlled by a large hand wheel. At each end of the bar is a tool holder carrying tools for cutting a V-groove in each end of the bearing for use in supporting it during the next operation.

3. Next is the over-all rough and finish turning, in a lathe carrying a mandrel with V-ring clamps to engage the grooves mentioned above in true reference to rough bore.

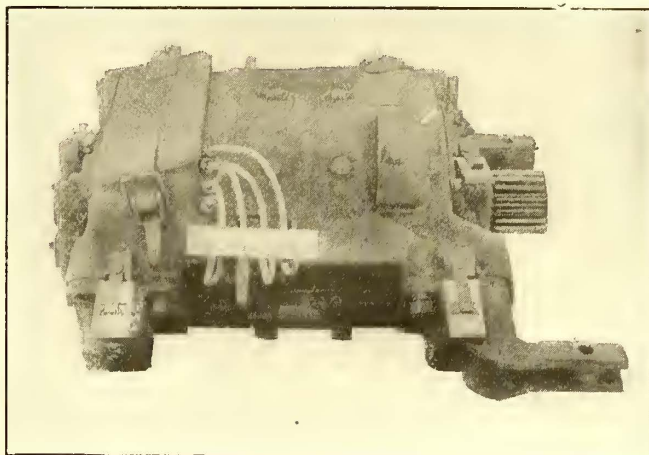
4. Then comes the finish bore in an excellent lathe inherited from war work. An extra stiff boring bar is used, and its inherent stiffness is reinforced by an anchorage at the rear end, not visible in the picture. In this operation the bearing is carried in a collet chuck, which revolves in a special bearing and which is furnished with split liners for the several types of bearing. These liners are split alternately from the two ends, as shown, so that they compress cylindrically in the chuck. The boring bar carries chamfering tools for rounding off the flanged end of the bearing, eliminating the V-groove there. The groove is allowed to

remain on the other end. The finish bore is made at high cutting speed, up to 200 ft. per minute and with fast feed, made possible by the stiffness of the lathe. The tolerance allowed in this bore is 0.002 in. above or under, which is possible because the chuck liner grasps the bearing uniformly over its entire length.

5. The final operation is the chamfering of the inside edges of the bearing halves, to permit the oil to flow onto the bearing surface. This is done on a special grinding table, through the surface of which projects a small emery wheel. On the front edge of the table is a stop which insures the proper angle and length for the chamfer.

As to costs of labor on contract on this bearing finishing, the following sample data will be of interest. With the men making 72 cents per hour, GE-203 axle bearings average about 47 cents for the job. GE-67 bearings average about 51 cents. During the war the figures reached as high as \$1. Westinghouse-533 bearings cost about 50 cents. These prices are not as low as could be obtained if the work were steady. Bearing work is a "filling-in" job and hence is intermittent.

The tramways use 1,500 box-frame motors. These are overhauled on a regular schedule and need few emergency repairs. A section of floor is set aside for



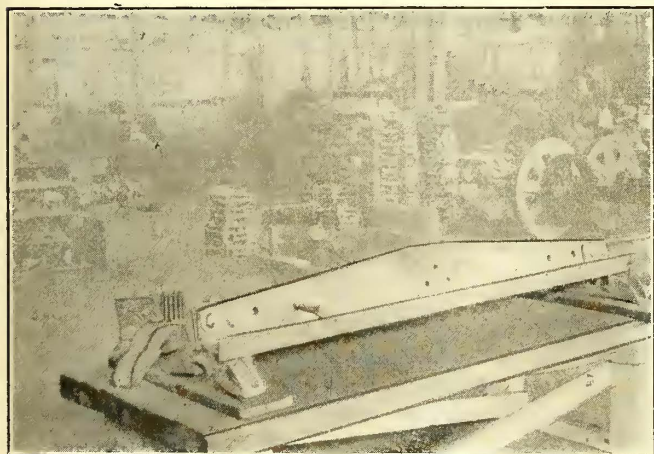
MOTOR WITH WOOD GREASE-BOX COVERS, MOTOR-LEAD CLEATS AND SHEET-IRON COMMUTATOR WELL COVER

the section, facilitating the transfer of armatures from point to point. Coil winding is done in the center of the space.

Another section is devoted to compressor maintenance and each machine is overhauled every eighteen months. The period will be reduced in due course to twelve months. The Westinghouse and G.E.-CP-27 compressors are standard. When piston fits are first worn out the cylinder is relined and bored out 30 mils under size, the piston and rings being turned down to fit. A special jig is used for holding the rings during turning. On the second overhaul the cylinder is bored to standard size and a new piston and new rings are put in. As far as wear is concerned the rings are good for about ten years' life.

#### TRUCKS BEING REBUILT AFTER NEARLY TWENTY YEARS

Many of the Tramways' cars are equipped with cast-steel trucks built locally between 1901 and 1905. These are now being thoroughly overhauled or, in fact, partly rebuilt. The pedestals are being relined with a steel channel section pressed out on the bulldozer. When journal-box guides cannot be machined to the new width they have strips welded in. Wood covers, impregnated, are being placed on the journal boxes. These are made of maple or other hardwood scrap at a cost of 30 cents each. Their use eliminates breakage and insures that the boxes are properly closed so as to keep out all water.

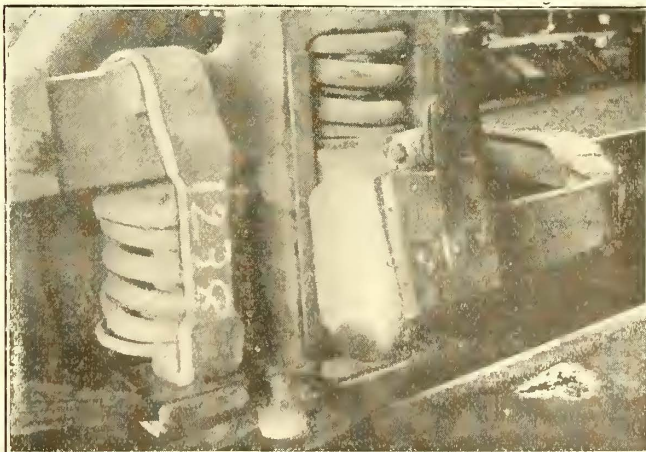


BRAKE BEAM WITH BRAKE HEADS RIVETED IN PLACE

such repairs, which for five years past have been handled by two men in the general repair shops. The same men have done this work during the entire period and thus have become expert. The average shopping of the motors for such repairs is at two-year intervals and they make 75,000 miles in this period. No box-frame motor repairs are made elsewhere than in the general shops.

Repair costs have been reduced and much noise eliminated by the use of impregnated wood covers, mounted by means of flat steel springs over the grease boxes. Paraffined wood clamp blocks for the motor leads have reduced grounding of leads to a minimum. On older types of motors the cast-iron cover over the commutator has been replaced by one of sheet iron, thus reducing weight, eliminating breakage and rendering the covers so easy to put on as to eliminate the temptation to leave them off. These covers have been used now for ten years.

Like the bearing section, the armature department has a rectangular layout, the stripping, winding, commutator connecting, etc., being done on the edge of the space. A trolley crane forms a belt line around



"CLOSE-UP" OF TRUCK PEDESTAL SHOWING DETAILS OF JOURNAL BOX COVERS, PEDESTAL LINING, ETC.

A most important improvement is the finishing of the surface of the brakeheads which make contact with the brake beams and the riveting of these in place instead of bolting. The life of brakeheads has thus been prolonged five times, due to the permanently rigid connection. Troubles in service have been lessened and maintenance costs have been reduced to a large extent. The additional work necessary has thus more than paid for itself.

A plan has also been worked out for replacing worn metal in the ball-and-socket joint of Brill brake hangers. A steel liner of spherical form and  $\frac{3}{8}$  in. thick is pressed into the socket, where friction holds it. The liners are pressed out hot in the bulldozer. When the ball is worn it is reshaped in a clean die, and if it is much worn a patch  $\frac{1}{4}$  in. to  $\frac{3}{8}$  in. thick, according to the wear, is worked in behind it. By this plan the life of the hanger is extended about two years each time it is relined.

Another useful kink in truck maintenance is the furnishing of photographic prints of trucks for the use of maintainers on which each item is numbered to correspond with an accompanying key. This eliminates confusion as to what part is meant when an order is given or a record made.

SOME OTHER POINTS IN THE SHOPS WHICH ATTRACT ATTENTION

In shops as large as those at Youville there are many sundry practices, some of which are wholly or partly novel. No attempt has been made here to list these. Among them is the winding of heater coils with the aid of a home-made machine shown in one of the illustrations.

Another point is the use of the bulldozer, which has been mentioned several times. Work for this machine is allowed to accumulate and experts put through the jobs in batches. About two days per month suffice at present.

In painting savings are being made by eliminating unnecessary operations with the idea that a coach finish is not required. While simple striping is still retained, it, as well as the numbering and lettering, is done with yellow paint instead of gold leaf as formerly used. The cars are kept unusually well painted, as part of the general and continuous advertising campaign of the company.

Security Sales to Customers

As a Result of a Plan Followed by the City Gas Company of Norfolk, Many of Its Customers Are Now Also Security Holders

ONE of the elements of making purchase of utility securities attractive to the public is to make such purchase on some easy method of payment. To do this the City Gas Company of Norfolk, a subsidiary of the Virginia Railway & Power Company, has adopted a method which is proving successful.

Eight per cent cumulative preferred stock is offered to the public at \$100 per share, payable in ten monthly installments. Many of the usual difficulties attendant upon such an installment plan of paying for stocks are avoided by what practically amounts to a card catalog system. The accompanying illustration shows the three useful sides of the card catalog folder and is practically self-explanatory. This is issued in duplicate; one is given to the subscriber and one remains in the files of the City Gas Company and record is made at the time of payment of each installment. This payment is made easier in the case of gas companies on account of the fact that many patrons come to the office of the company to pay their bills monthly, but the system is certainly applicable to railway use as well.

Reports from Norfolk indicate that the plan has been very successful and that a satisfactorily large amount of preferred stock has at the present time been purchased by customers.

Contract No. ....

**CITY GAS COMPANY OF NORFOLK**  
Norfolk, Va.

I hereby subscribe for.....  
shares of 8% Cumulative Preferred Stock of

**CITY GAS COMPANY OF NORFOLK**

for which I agree to pay to the said Company \$100.00 per share, as follows:

\$..... berewith (receipt whereof is hereby acknowledged) and the balance in nine equal installments of

\$..... each, payable on or before the ..... day of each and every month hereafter until the full amount subscribed for is paid, at the office of

**CITY GAS COMPANY OF NORFOLK**  
No. 200 Plume Street  
NORFOLK, VA.

upon the terms and conditions hereinafter contained in this folder and made a part hereof.

Name.....  
Subscriber

Address.....

Date.....

Witness.....

(To be signed in duplicate, one for the subscriber, and one for City Gas Company of Norfolk)

CONTRACT NO. ....

**TERMS AND CONDITIONS**

1. Interest at the rate of eight per cent. will be credited on all payments from dates of payment, and will be charged at the same rate on all delinquent payments from the dates when due.

2. Within ten days after payment of this subscription in full, stock certificates for the shares hereby subscribed for will be issued and delivered to the subscriber or his assignee at the Company's office, bearing even date with the last payment hereon. Dividends on this stock begin to accrue only after the stock is issued.

3. If any payment is not made by the date when due, and is not paid on or before the date on which the next payment becomes due, the full amount of this subscription, less any payments already made, shall thereupon immediately become due and payable, or the Company, at its option and in its discretion, may sell, publicly or privately, and transfer this contract without notice to the subscriber or his assignee, remitting to the subscriber hereof or his assignee the proceeds, less \$5.00 on each share which the Company may deduct as commissions, expenses and damages arising out of the violation of this subscription agreement, and the sale of this contract.

4. This contract may be transferred, provided the assignee and assignee agree as provided on page four hereof, and further provided the assignee on or before the date when the next payment therefor is due, registers such assignment and signs the duplicate thereof at the Company's office, but each and every assignor shall remain liable as a surety for the payment of any balance then due or that may ever become due on this subscription.

5. If this contract is lost, the Company, upon satisfactory proof and assurance, will issue a duplicate substitute therefor.

6. This contract must be surrendered to the Company with and at the time of the last payment and the Company will issue a proper receipt therefor.

	PAYMENT DUE	AMOUNT
1		
2		
3		
4		
6		
6		
7		
8		
9		
10		
<b>Total to Ninth Payment</b>		
<b>Adjustment of Interest on Payments Made</b>		
<b>Amount due on Tenth Payment</b>		
<b>TOTAL AMOUNT</b>		

RECEIPT OF PAYMENT IS ACKNOWLEDGED BY SIGNATURE OF COMPANY'S AGENT AND DATE OF PAYMENT.

DATE	RECEIVED PAYMENT
1	
DATE	RECEIVED PAYMENT
2	
DATE	RECEIVED PAYMENT
3	
DATE	RECEIVED PAYMENT
4	
DATE	RECEIVED PAYMENT
6	
DATE	RECEIVED PAYMENT
6	
DATE	RECEIVED PAYMENT
7	
DATE	RECEIVED PAYMENT
8	
DATE	RECEIVED PAYMENT
9	
DATE	RECEIVED PAYMENT
10	
DATE	RECEIVED PAYMENT

TYPE OF CARD CATALOG CONTRACT USED BY CITY GAS COMPANY OF NORFOLK  
At left, form of contract to be filled out and signed by customer. In center, terms and conditions that govern.  
At right, receipt card for recording payments as made.



# Traffic and Housing in Large Cities\*

The Connection Between the Two Is Close—Local Conditions Will Increase or Decrease the Annual Rides per Inhabitant—Definite Relation Found Between Track and Building Development Within Different Areas Equidistant from a City Center

BY DR. ARTHUR ERTEL

Secretary Internationale Strassenbahn und Kleinbahn Verein, Vienna

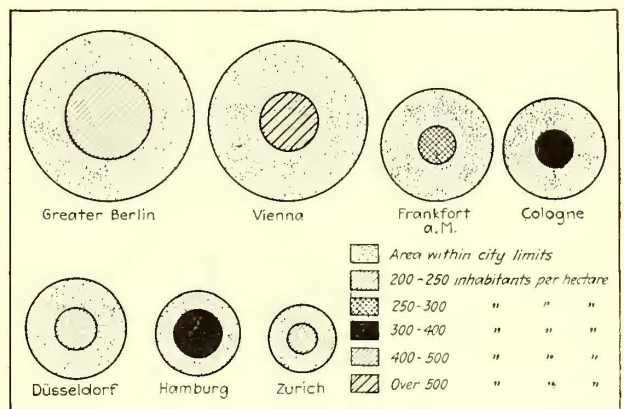
THE question of housing in cities of more than 100,000 inhabitants today is largely a transportation question. The recent economic conditions, the effect of the eight-hour day and the increased prices of construction materials have greatly affected the street railways, and the higher fares which they have been obliged to charge have cut down the traffic between the residential districts and industrial centers. In fact, it is impossible to foresee when there will be a return of normal conditions to the railways, although that they ultimately will recover there is no doubt any more than that the entire state will be brought back to normalcy in due time.

Studies of the relation between housing and transportation are of value only if a very large number of individual cases is investigated and if proper care is taken for the further development of each railway system.

The city of the future will differ materially from that of the present with its closely built up and congested central area,† so that wrong conclusions will be drawn if present experiences are used without modification as a basis for predicting the traffic of the future. Future city development will be characterized by a much more extensive use of the small single-family house with gardens and much more open space. The large factories to which and from which large numbers of working people flow rhythmically will stay as they are.

The new means of city transportation will have to be fast, and the fares must be in accordance with the means of the users. At present this cannot be accomplished, but we all have as our goal the final restora-

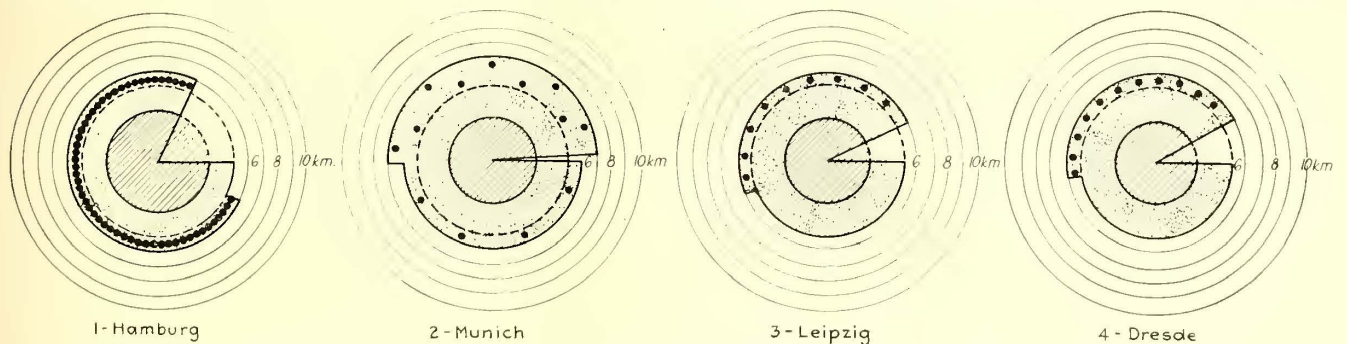
Recent developments in electric roads have not in all cases been particularly fortunate. In some cases too much red tape and supervision by incompetent authorities have been a handicap, and in many other cases the street railway has imitated too closely its bigger brother, the steam railroad, by installing far too heavy rolling stock. As far as fare systems are con-



GRAPHICAL REPRESENTATION OF SIZE OF CITY, AREA OCCUPIED BY BUILDINGS AND DENSITY OF POPULATION

The outer circle shows the size of the city, the inner circle the area occupied by buildings and the shading of the inner circle the population density.

cerned, we are today only at the beginning. We cannot expect good results if every passenger has to pay uniformly for the distance traveled. If we make the long-distance city fare proportionately too low the urban



GRAPHICAL REPRESENTATION OF AREA AND DISTRIBUTION OF POPULATION BEYOND THE 5-KM. RADIUS

The smallest circle shows the built-up area, each dot in the shaded portions beyond the 5-km. circle indicates 1,000 population, the open sectors indicate arrested expansion due to natural

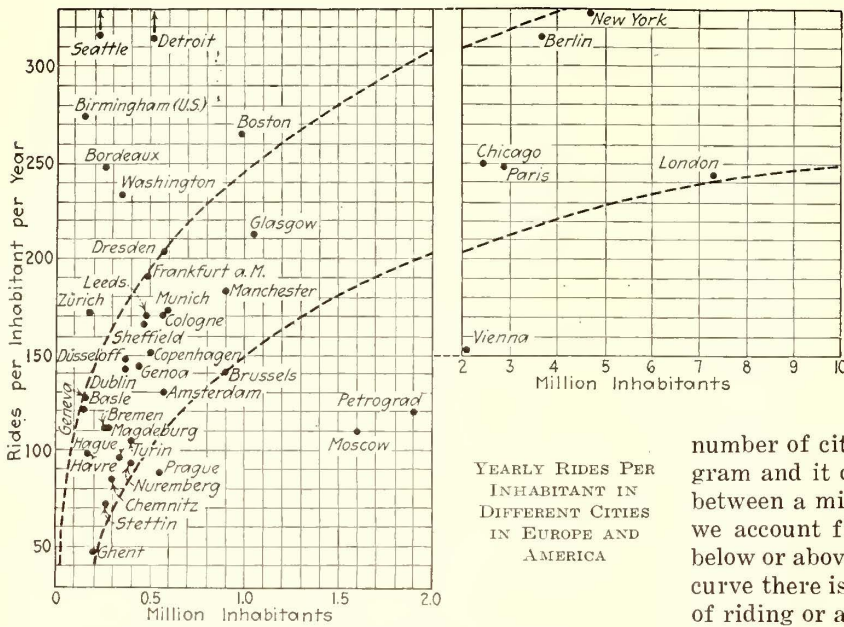
obstructions, like a body of water, or the proximity of a community under different political control. These sectors are, for Hamburg, 17%; Munich, 1%; Leipzig, 6.7%; Dresden, 7.8%.

tion of normal times. In the meantime, the number of transportation means has largely increased. As the greatest competitor to the street railways the automobile has already to be considered, and the airplane may follow soon.

traveler has to make up for it. If we ask both classes of passengers to pay proportionally to the distance traveled we shall lose the commuter. Two ways have been suggested to solve this problem. One which was advocated ten years ago has now little chance of realization; that is, to give free transportation to every resident and to cover expenses by taxes. The other is to defray part of the expense of building and operation of

\*Abstracted from *Verkehrstechnik*, May-June, 1921.

†EDITOR'S NOTE: Dr. Ertel is speaking primarily, of course, of the older European cities, where this condition prevails to a much greater extent than in the average American city.



YEARLY RIDES PER INHABITANT IN DIFFERENT CITIES IN EUROPE AND AMERICA

shown in the second diagram, where it is represented by sectors graduated by degrees. This diagram shows also the number of city residents located outside the 5-km. radius (each black circle representing 1,000 inhabitants). From 1871 to 1910 the total area occupied by German cities increased 210 per cent.

It is customary to judge the traffic of a city by the number of yearly rides per inhabitant. In general, this gives a fairly truthful picture of actual conditions. In some cases, however, additional facts to understand the data are necessary. The third engraving gives these values for a

number of cities in Europe and America in a target diagram and it can be seen that practically all points come between a minimum and maximum curve. But how can we account for the considerable number of cities lying below or above the curves? In cities below the minimum curve there is no doubt either a less-pronounced necessity of riding or an extensive use of transfer tickets. Not so easy is the explanation of the many cities above the upper curve, which comprise cities of quite limited size and especially American cities. No doubt the large areas of such places like Boston, Detroit, Washington, Chicago, etc., account largely for this large number of rides.\* It is to be regretted that no more data are available for this investigation, but many spread-out European cities also show high traveling rates.

TABLE SHOWING POPULATION AND RIDES PER INHABITANT IN LARGE CITIES

	Population in Millions	Rides per Inhabitant per Year		Population in Millions	Rides per Inhabitant per Year
<b>Germany</b>			<b>America</b>		
Berlin	3 708	315	New York	4 767	321
Munich	0 596	173	Boston	1 099	266
Dresden	0 576	205	Detroit	0 515	377
Cologne	0 572	170	Washington	0 343	236
Frankfurt	0 487	191	Seattle	0 237	437
Nurnberg-Furth	0 400	93	Birmingham	0 150	277
Dusseldorf	0 371	149	Chicago	2 447	250
Chemnitz	0 297	85	<b>France</b>		
Magdeburg	0 278	112	Paris	2 822	249
Brèmeu	0 269	111	Bordeaux	0 262	258
Stettin	0 258	72	Amiens	0 093	71
<b>England</b>			<b>Denmark</b>		
London	7 312	244	Copenhagen	0 500	151
Glasgow	1 050	212	<b>Switzerland</b>		
Manchester	0 900	184	Zurich	0 188	172
Leeds	0 484	170	Basel	0 155	129
Sheffield	0 470	167	Geneva	0 154	122
Dublin	0 380	143			
<b>Former Austria</b>					
Vienna	2 030	154			
Prague	0 552	89			
<b>Belgium and Holland</b>					
Brussels	0 900	141			
Ghent	0 209	48			
Amsterdam	0 573	123			
Hague	0 321	97			

the roads by a special assessment upon the real estate owners of the communities served. However, it is useless to discuss the fare questions until our (German) wages and material costs have become stabilized.

In 1910 Germany contained forty-eight cities with a population of 13.8 millions, or 21.3 per cent of the total population lived in cities of this size. It is of importance to determine the relation of area of city, total buildings-covered area, and density of population. The first diagram shows this graphically for seven large cities. (Berlin, Frankfurt a/M, Cologne, Düsseldorf and Hamburg in Germany, Zürich in Switzerland and Vienna in Austria.)

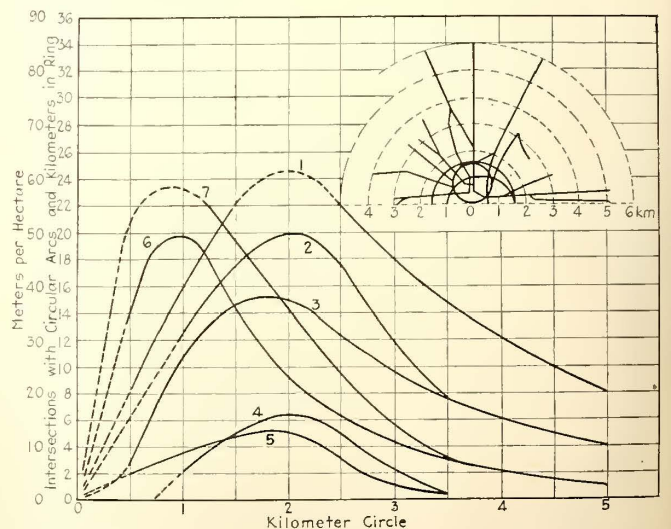
Provided there are no lateral restrictions, the most natural development of a city is radial; that is to say, the city tends to take the circular form. Most large cities have exceeded their 5-km. (3-mile) radius, and some of them extend already beyond their 10-km. (6-mile) radius. It happens frequently that the center is so eccentrically located that communities under a different political control reach into the city area proper. To how much this amounts is graphically

CHARACTERISTIC CURVES OF CITIES ANALYZED

For the more accurate investigator these general figures are, however, not precise enough, and he has to investigate more closely the individual cases.

The largest German city, Berlin, is not suitable for such an investigation, as it represents the conglomeration of several previously independent political subdivisions, which had, and to a certain degree still have, their own community centers and consequently their centers of traffic. Cities like Vienna, Munich, Düsseldorf, Cologne and Zürich have been more closely investigated by the author. The results of Vienna and Cologne are given on this and the following page.

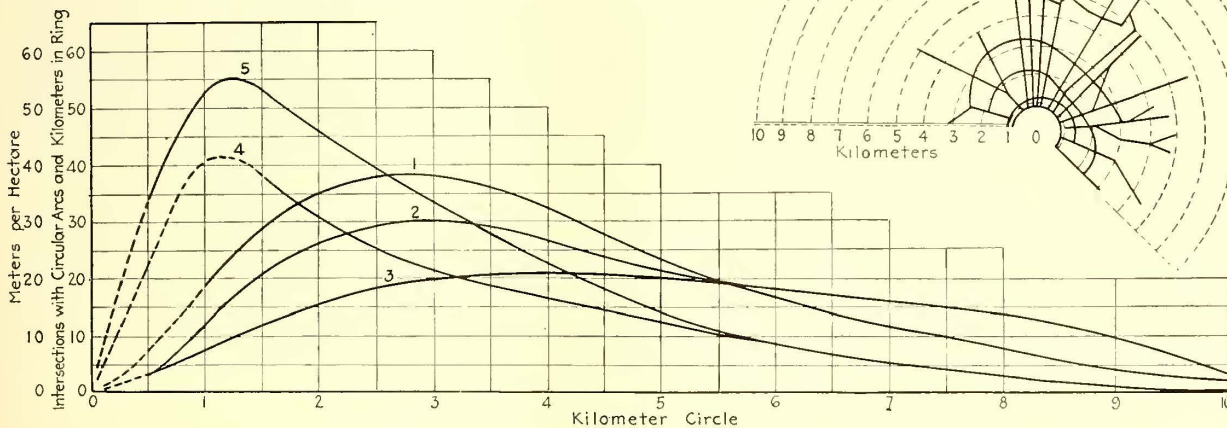
[\*EDITOR'S NOTE: In some cases also, probably, the figures for population have been taken from the census reports for the central city and represent a smaller number of people than those actually tributary to the railway.]



CHARACTERISTIC CURVES OF TRAMWAY DEVELOPMENT IN COLOGNE

The upper right-hand drawing in each case is a chart of the greater part of the city included within the circular arcs drawn. The entire system is not shown in either case, because of the intersection of each city by a river, the Rhine in the case of Cologne and the Danube in the case of Vienna. In consequence, a sector of 180 deg. in the case of Cologne and of 225 deg. in the case of Vienna, is given and contains the significant routes. The lines are drawn from a radial point, which in Cologne is the Heumarkt and in Vienna is Stefansplatz. These are not the heaviest points of traffic, but are taken as the logical radiating point in each case.

In the lower left-hand portion of the diagram representing conditions in Cologne are curves giving the following data as they occur within the 1/2-km. rings around this radial point. No. 1 shows the number of intersections of radial street railway lines with each 1/2-km. arc. No. 2 shows the length measured in kilometers of both radial lines and crosstown lines within each circular ring. No. 3 shows the same except that the radial lines only are included. No. 4 shows the same for the crosstown lines. No. 5 gives the average length in meters of the crosstown lines per hectare occupied by buildings within each ring. No. 6 gives the same data for the radial lines and in No. 7 the length of both radial and



CHARACTERISTICS CURVES OF TRAMWAY DEVELOPMENT IN VIENNA

crosstown lines are included. In the case of the chart for Vienna there are only five curves. No. 1 shows the number of intersections of radial lines with each 1/2-km. arc. No. 2 shows the length in kilometers of both radial and crosstown lines within each circular ring. No. 3 shows the same except the radial lines only are included. No. 4 gives the average length in kilometers of radial lines on each hectare occupied by buildings within the ring, and No. 5 gives the average length in kilometers of both radial and crosstown lines for each hectare occupied by buildings in each ring.

To compensate for abnormal values due to river area within the city in each case, the river areas have been calculated as being of the same density of population as the remainder of the city.

The regularity of the curves so plotted from the data so obtained, not only for these cities but for the other cities investigated, was surprising. The other cities considered were Munich, Düsseldorf and Zürich, and the curves in all were of the analytical character of

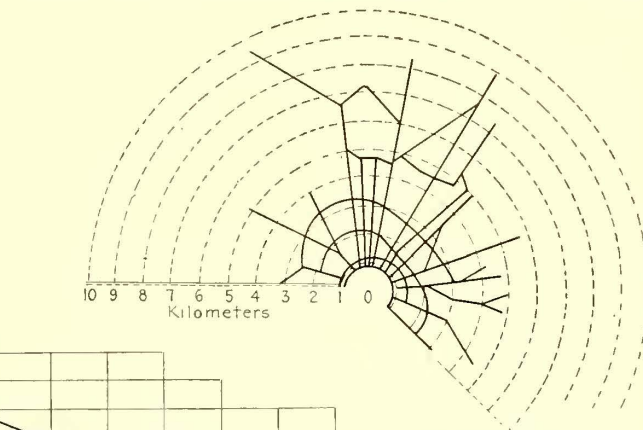
$$(X^2 + a)Y = bX$$

Even the values of *a* and *b* showed a surprising regularity which permits of the conclusion that further developments based upon these rules will lead to the solution of future economical traffic problems.

### Coal Consumption by Users

THE Geological Survey of the Department of the Interior has recently made public the following summary of information on coal consumption in the United States. The department points out, in this connection, that consumption is not the same as production. Not only must exports and imports of coal be taken into consideration, but the flow of coal in and out of storage must be reckoned with. Further, there is great variation in the quantity of coal actually consumed from year to year, depending to some extent on the weather and to much greater degree on the activity of the industries which are the chief consumers of coal.

The proportion of the total coal consumed, taken by different industries, does not vary so greatly, and the percentages shown in the table below are roughly constant from year to year. The table represents in a general way the conditions during 1917, a year of large consumption. The principal changes since 1917 have been an increase in the proportion exported and a trans-



fer of some millions of tons from beehive to by-product coke. The proportion consumed by the two types of coke ovens combined has undergone little change.

#### COAL CONSUMED IN THE UNITED STATES AND EXPORTED

(The figures for bituminous coal in this table represent in somewhat generalized form the calendar year 1917; those for anthracite, the coal year ended March 31, 1917.)

	Quantity, (Net Tons)	Per Cent
Bituminous coal:		
Industrial plants.....	174,600,000	31.7
Public utilities:		
Electric.....	31,700,000	5.8
Gas.....	4,960,000	0.9
Railroads.....	153,700,000	27.9
Domestic consumers.....	57,100,000	10.3
Power and heat at mines.....	12,100,000	2.2
Exports.....	22,900,000	4.1
Bunkers:		
Foreign trade.....	6,700,000	1.2
Coastwise and lake trade.....	3,600,000	0.7
Beehive coke.....	52,240,000	9.5
By-product coke.....	31,500,000	5.7
	551,100,000	100.0
Anthracite:		
Domestic consumers (domestic sizes).....	49,400,000	55.1
Artificial gas plants.....	1,650,000	1.8
Steam trade (industries, power plants and heating large buildings).....	18,450,000	20.5
Railroad fuel.....	6,400,000	7.1
Power and heat at mines.....	9,350,000	10.4
Exports.....	4,600,000	5.1
	89,850,000	100.0
Grand total.....	640,950,000	

## The Imperial Omnibus in Service

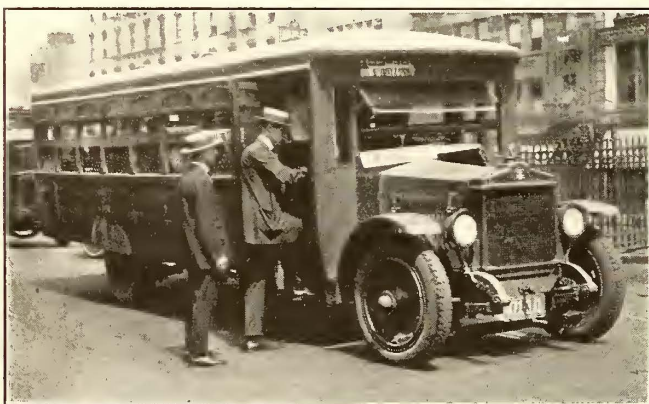
Trial Tests Being Made in Actual Service on One of New York's 5-Cent Bus Lines—Takes Well with the Riding Public and City Officials

THE Trackless Transportation Company of New York, the originator of the low center of gravity, underslung, stepless bus, has recently put one of these motor cars into service on the bus routes in downtown New York which are operated under the control of the department of plant and structures of the city. On this route there are many other types of motor buses but none of them are like this one in design. By means of actual service tests the company will soon be able to know what can be expected of the new bus under actual operating conditions.

The motor bus is of a new type and has been especially designed for passenger service. Some of the factors sought are maximum of safety and comfort to passengers, low cost of maintenance and economy of operation.

The bus, as shown in the accompanying illustrations, has a low underslung body, with the floor but 26 in. above the level of the street. The entrance is at the right forward end, is spacious and has but one step. This allows ready egress and ingress of passengers with a minimum of delay. The bus has a seating capacity of twenty-nine, on four cross seats on either side, two longitudinal seats over the rear wheels and a seat across the rear of the body large enough to accommodate five passengers. Standees to the number of twenty can be accommodated, and this gives a maximum load of forty-nine passengers. An emergency door is provided at the rear. The windows are raised sash and when opened cause a wire guard to slide into place, thereby rendering it impossible for a passenger to put out his arms or head.

The body is of steel-aluminum construction and was built by the Kuhlman Car Company, Cleveland. It is of the truss side type, with the lower member a structural steel angle and the top member a pressed steel letter-board. The posts are of pressed steel and the roof is



EXTERIOR OF MOTOR BUS SHOWING LOW FLOOR AND ENTRANCE WITH ENCLOSED STEPS

of Haskelite. The interior finish is of birch, stained mahogany color with a white enamel roof. Illumination is furnished by seven dome lights. There is also a step light and light for an illuminated destination sign. Three exhaust ventilators are provided, mounted along the center line of the roof. Another ventilator is mounted on the dash of the bus.

The chassis frame is of special design and of a

channel section. A special Buda engine of the ETU type, with Fuller transmission and Clark internal drive rear-end specially designed make up the power plant. The transmission has four speeds forward and is mounted amidships. It has gears of very wide face.

The rear axle carries 65 per cent of the total weight. The chassis weights approximately 5,000 lb. The rear springs, which are of the compensating type, are 60 in. in length and are hung below the axle. The front axle is of the drop construction type with spring pads forged on the top face in the dropped position. This spring arrangement, using springs of elastic furnace chrome



INTERIOR LOOKING TOWARD THE REAR, SHOWING SEATING ARRANGEMENT

silico manganese steel, together with giant pneumatic tires gives very easy riding qualities and provides a maximum of comfort for the passengers. It is possible to substitute cushion type tires for pneumatic tires where desired, which would reduce height of floor about 2 in.

The chassis as equipped has an electric starting and lighting system, speedometer, power tire pumps, fire extinguisher and motometer. There are two forms of brakes. One is a service brake, which is of the propeller shaft-locomotive type that works on the drive shaft; the other is an emergency internal expanding brake on the rear axle.

Two wheel gages are used. The rear wheels are placed 71 in. apart in order to reduce to a minimum the chance of overturning. The front gage is 66½ in. which is desirable in order to give as small a turning radius as possible. The wheelbase is 183 in.

### Less than 7 per Cent of Average Family Income Goes for Utility Services

LESS than 7 per cent of the average yearly income of Ohio families is spent for public utility service according to figures compiled by the Department of Home Economics of Ohio State University. This compilation shows that the actual amount spent in 1920 by the average family having an annual income of \$1,500 to \$6,000 for the services of the utility companies was only 6.49 per cent of the total income.

The families included in the survey spent 1.01 per cent of their income for electricity, 2.27 per cent went for street-car rides, 1 per cent for telephone service and 2.45 per cent for gas.

# The Weekly \$1 Pass in Wisconsin

**Experience in Racine and Kenosha Indicates Useful Field for This Method of Encouraging Off-Peak Riding—Pass-Holders Take Nearly Four Rides a Day—Simplification of Fare Collection Results from Use of Pass**

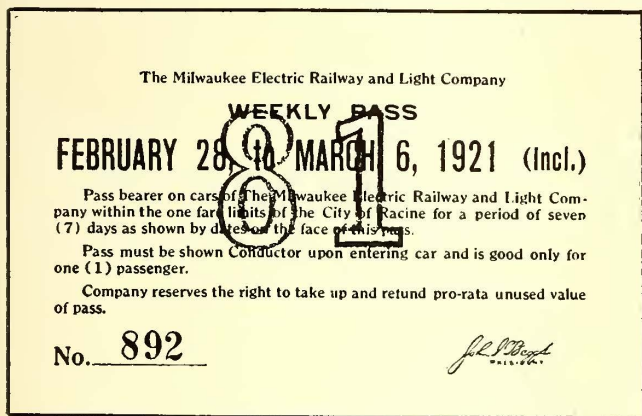
BY WALTER JACKSON  
Consultant

THE Jan. 3, 1920, issue of the ELECTRICAL RAILWAY JOURNAL described the "Unlimited-Ride, Transferable Weekly Pass at Racine" inaugurated Aug. 18, 1919. The management, the Milwaukee Electric Railway & Light Company first introduced this pass before the safety cars were installed in Racine, so that now the plan has been tried and has worked on both two-man and one-man cars. As the associated Wisconsin Gas & Electric Company adopted a similar plan on Jan. 24, 1921, in Kenosha it seems opportune to discuss the nearly two years' experience of the Racine lines.

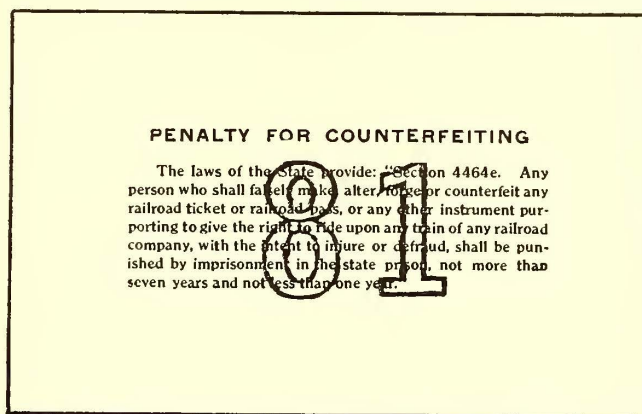
It is not necessary to repeat in detail the reasons for introducing a form of transportation which, theoretically, allows unlimited riding for \$1 per week. Stress should be put upon the fact, however, that, unlike the

transfers. For the week ended Jan. 16, 1921, the average number of rides reduced to a revenue basis was 26.5 or slightly less than four a day. In attaining the latter figure, the company assumed that 15 per cent of the gross rides counted were transfers, this being the transfer proportion of the other traffic. This means that the patrons who take as many off-peak rides as they do rush-hour rides (since it is practically impossible to take four rides during rush hours) average a fare somewhat less than 4 cents.

In contrast to this, it may be pointed out that when the pass was instituted, the fares were 6 cents cash with five tickets for 30 cents, good at all hours of the day, and a 5½-cent ticket (ten tickets for 55 cents), good for transportation between the hours of 6 and 8 a.m.



FACE OF PASS SHOWING MARKINGS FOR CONDUCTOR'S CONVENIENCE



REVERSE SIDE ON WHICH CONDITIONS OF USE ARE PRINTED

passes developed on European street railways, the cost is such that the holder would be paying more than the cash or general ticket rate if he did not take more than two rides a day. Therefore, the idea of this pass is not to give a reduction to the usually compulsory peak-hour rider but to the usually voluntary off-hour rider.

In practice, the pass acts exactly as if fares were being charged on a distance basis. The holder who lives close in may take luncheon rides regularly, whereas the holder who lives near the end of the line will not do so because of time limitations. Similar limitations may occur in connection with evening travel. Hence, in the long run, each holder tends to get about the same mileage despite differences in the number of rides.

## PASS-HOLDERS TAKE NEARLY FOUR RIDES A DAY

Knowledge of pass experience in foreign cities with length of routes comparable to Racine anticipated an average of four rides per business day. This has been confirmed by two checks taken a long time apart. For the week ended Nov. 7, 1919, it was found that the average number of rides per pass-holder on a weekday was 4.1 and for Sunday, 2.4, including rides normally

and 5 and 7 p.m. On Nov. 23, 1919, about three months after the installation of the weekly pass, these rates were increased to 7 cents and six tickets for 35 cents, at all hours of the day. Even with the so-called workmen's tickets abolished, the pass had to compete with a reduced rate ticket. This fact has doubtless kept down the purchase of passes, which require a dollar's initial outlay instead of 35 cents.

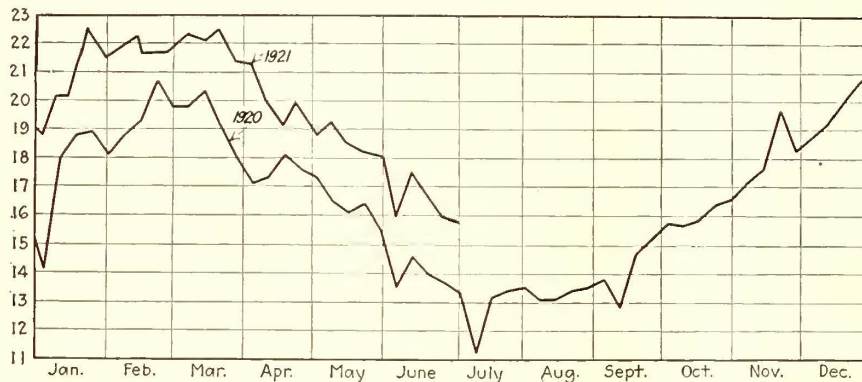
Reducing the matter to terms of revenue rather than rides, we find that the pass-holder yields, say, 16 cents a day, while the cash rider probably does no better than 14 cents. The ticket rider yields still less except for his occasional extra ride. If the ticket rider averaged three rides a day or more it would, of course, be to his interest to purchase a pass.

In this connection, the point has been raised whether or not the transferable feature leads to much splitting in the use of the pass. A little thought should show that this is rarely practicable from purely physical reasons. A holder of the pass necessarily cannot give it to another until he has returned from his journey. Such splitting as does occur is carried on among clerks who have successive luncheon periods, but even here the plaints of the downtown restaurant keepers bear

witness to the fact that these clerks formerly patronized the nearby lunchroom instead of riding home. Another opportunity for splitting the use of passes lies in their use by housewife and children, but this is encouraged rather than discouraged because it creates voluntary customers. Aside from this, children would enjoy the lowest ticket rate in any case.

#### ONE-THIRD OF REVENUE PASSENGERS HAVE NO PHYSICAL TRANSACTION WITH THE CAR OPERATOR

During the first week's (August, 1919) use of the pass, the sales ranged from 818 to 964 a week and the percentage of revenue was 10.2 per cent in the case of the larger sales figure. Furthermore, during the week ended Aug. 24, when 818 passes were sold, there was a drop of 1.5 per cent in revenue compared with the preceding non-pass week. This might be explained by the natural assumption that the first buyers would largely be those whose concerns led them to ride more than usual. The next month saw the sale of passes exceed the 1,000



SEASONAL FLUCTUATIONS IN SALE OF WEEKLY PASSES, IN HUNDREDS

mark, and thereafter revenue increased steadily in comparison with like periods. It is not asserted that the pass caused these enhancements of revenue. During the year following its installation Racine was an increasingly busy community.

In September and October, 1920, came faster and more frequent service through the use of the safety cars on all base schedules. This improvement stimulated traffic further. Thus it was that while only 1,128 passes were sold the week ended Sept. 28, 1919, a total of 1,528 passes were sold the week ended Sept. 26, 1920. Late in 1920 Racine's industries began to suffer, but, curiously enough, the pass sales kept climbing, the week ended Dec. 26, 1920, showing 2,080, against the previous comparable Christmas shopping week of 1919, when 1,602 passes were sold. The week ended Dec. 21, 1919, was high water mark for that year, with a sales of 2,055. For the months of January and February, 1920 and 1921, the sales compare as follows:

1920		1921	
Week Ended		Week Ended	
Jan. 4	1,413	Jan. 2	1,880
Jan. 11	1,796	Jan. 9	2,046
Jan. 18	1,879	Jan. 16	2,074
Jan. 25	1,889	Jan. 23	2,255
Feb. 1	1,813	Jan. 30	2,148
Feb. 8	1,876	Feb. 6	2,177
Feb. 15	1,932	Feb. 13	2,219
Feb. 22	2,069	Feb. 20	2,163

One of the interesting observations during the present industrial depression is the tendency toward the purchase of passes by those who are seeking work, or perhaps striving to kill time by visiting. The possession

of an unlimited-ride pass seems to give them a lot more satisfaction than if they were to spend an equal amount of money for fewer rides.

A most intensive survey would probably be needed to reveal just how much extra revenue is due to the use of passes. This is impracticable, so only the unquestioned benefits will be studied. First, the fact that today approximately 32 per cent of the revenue passengers are pass-holders. This means that one-third of the riders do not call for any more exertion on the part of the car operator than a glance at the color and inch-high numerals of the pass. These riders have but one cash transaction a week (when they purchase the pass) and they never demand or have arguments about transfers. As all but 22 per cent of the total revenue passengers present some form of ticket fare, it is obvious that the operation of safety cars in Racine is close to the ideal as regards their most mooted point, namely: slowness in fare collection.

For the first three or four months following the installation of the pass it was customary for the conductor to ring up on an overhead register each pass presentation, the cash and metal token fares going into a registering farebox. Following a shift in equipment which placed in service in Racine cars which happened to be without such registers, the company concluded that the experience gained made it unnecessary to count pass riders. The two surveys mentioned have shown that the multiplication of the number of passes sold by four gives a sufficiently accurate estimate of the number of riders. The other revenue passengers, as hitherto, continue to drop their fares in the box.

A second advantage is that the car operator and the pass rider have a minimum of friction in their relations. The pass-holder also has the cheerful feeling that any car is his car any time. He comes as close to regarding the car as his personal vehicle as it is possible to make a public conveyance. It is only human nature for him to ride much shorter distances than if he paid separately for each ride, and thus he acquires willingly a most desirable habit.

#### SALES IN 1921 GREATER THAN IN 1920

So successful has been the combination of one-man car and weekly pass that it has offset to a pleasingly large extent the losses that must be expected during the present depression. Each has done its share toward popularizing the service with both the public and the car operators.

An examination of the sale of passes throughout any extended period will show fluctuations of 50 to 90 per cent. Without going into details it may be stated that weather conditions favoring automobiles, factory inventory periods, holiday weeks, holiday shopping time, and the opening and closing of schools are the chief factors. School children are large users of the pass since it enables them to go home for lunch and to do more riding when visiting their friends. Nor is it a bad idea to foster the car-riding habit at the most impressionable time in the automobile era.

The latest figures from Racine show pass sales to be 15 to 20 per cent ahead of the same period of 1920. The actual sales in 1921 were:

Week Ended:	Week Ending	
Feb. 27.....	2,169	May 8..... 1,914
March 6.....	2,222	May 15..... 1,848
March 13.....	2,206	May 22..... 1,821
March 20.....	2,249	May 29..... 1,804
March 27.....	2,131	June 5..... 1,595
April 3.....	2,129	June 12..... 1,756
April 10.....	1,986	June 19..... 1,680
April 17.....	1,917	June 26..... 1,599
April 24.....	1,986	July 3..... 1,581
May 1.....	1,882	

In conclusion, it may be stated that the turn for the better has not yet reached Racine. Another hindrance to traffic since April 8, 1920, is the reconstruction of the State Street bridge, which has had the effect of cutting off considerable revenue.

**ENCOURAGING THE SHORT-HAUL AND OFF-PEAK RIDER IN KENOSHA**

The Kenosha lines of the Wisconsin Gas & Electric Company may be said to require traffic encouragement even more than Racine. While Racine has a population of 63,289 (Jan. 1, 1921, estimate) and routes averaging more than 2 miles from the business and amusement center, Kenosha has only 43,710 people with routes as follows:

	Miles
Milwaukee Avenue.....	1.21
Elizabeth Street.....	1.69
Market Street.....	1.64
Sheridan Road.....	1.30
Grand Avenue.....	1.30

All of these routes converge at the center of the city. The fares are 7 cents cash, or eight metal tokens for 50 cents; children's fares 4 cents, and the weekly pass for \$1. The passes sold during the first week ended Jan. 30, 1921, were 392; for the week of Feb. 6, 445; Feb. 13, 501; Feb. 19, 465, and Feb. 26, 498. For the week of Feb. 13 the passes brought approximately 15 per cent of the revenue. At present about one-fifth of the revenue riders travel on passes. More recent figures are:

Week Ended:	Week Ended:	
April 10.....	466	May 29..... 446
April 17.....	474	June 5..... 403
April 24.....	483	June 12..... 400
May 1.....	471	June 19..... 402
May 8.....	477	June 26..... 412
May 15.....	456	April 3..... 514
May 22.....	433	

These figures reflect the tendency toward a decline with the advent of automobile weather. The Kenosha lines have had harder luck than Racine as regards bridges, for in their case the main route has been cut in half during the construction of a new high-level bridge on Main Street since June 10, 1920. Therefore, the possibilities of the pass remain to be determined, although the management has got out inserts with light bills and distributed car dodgers to advertise the pass more extensively than has been done at Racine.

Indeed, as regards both communities, there is still room to sell the pass to a larger number of people on the basis of convenience rather than economy. Such additional patrons are very desirable because they will naturally raise the average rate of fare from this class of business.

**An Illuminated Time Table**

A METHOD of lighting time tables as employed at the Waterloo station of the London & Northwestern Railway was described recently in the *Railway Engineer*. The time tables are mounted on racks in the center of the concourse, being pasted on inclined

panels of clear glass illuminated by transmitted light from lamps inside the rack. Three 20-watt lamps, distributed behind the panel and, of course, serving to illuminate the panels on the reverse side, are used. By this means uniform illumination, equivalent to 4 foot-candles, is provided, and in these circumstances the smallest figures can be read with ease. As the light comes entirely from behind the time tables there is no danger of inconvenient shadows being cast by the observer as he reads.

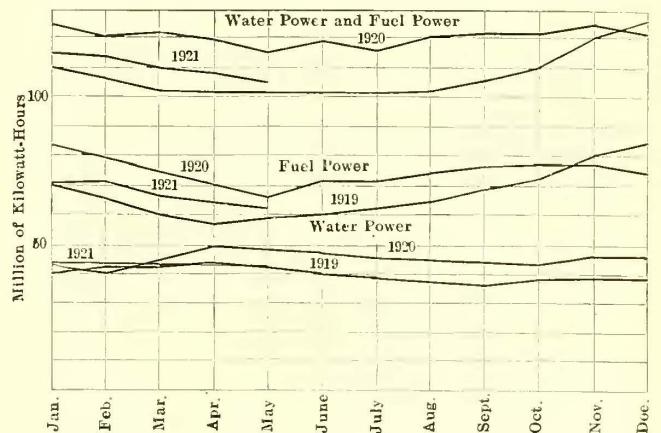
On the Underground Railways illuminated information signs also play an important role, saving the staff a great deal of questioning by the public and materially assisting them in directing traffic. Experiments are also being conducted with a form of sign which might be placed transversely across the platform, so that it could be seen by any one looking out of the window of an approaching train.

**Statistics on Power Generation**

ON JULY 28 the United States Geological Survey issued a bulletin giving statistics of the production of electric power by public utility power plants in the United States during the first part of 1921, and for several previous years. A chart which shows the average daily production for this period is published herewith.

The quantities in this chart are based on returns received from about 3,200 power plants of 100-kw. capacity, or more, engaged in public service, including central stations, electric railways, and certain other plants which contribute to the public supply. The capacity of plants submitting reports of their operations is about 95 per cent of the capacity of all plants listed. The output of plants which do not report is estimated.

The mean daily output in kilowatt-hours for January, February, March, April and May was 114,200,000, 113,-



AVERAGE DAILY PRODUCTION OF KW.-HR. BY PUBLIC UTILITY PLANTS IN THE UNITED STATES

400,000, 109,600,000 108,000,000 and 105,400,000 respectively. The proportion produced by water power was as follows: 37.9, 37.7, 39.6, 40.4 and 40.6 per cent, respectively. The mean daily rate of production of electricity by public utility plants for May, 1921, is the lowest since August, 1919. It should be noted, however, that the decrease in the daily output of electricity by public utility plants since January as shown by the curve of total output for 1921 is probably the normal seasonal decrease due to the increasing hours of daylight.

# Equipment and Its Maintenance

*Short Descriptions and Details of New Apparatus of Interest  
to the Industry. Mechanical and Electrical  
Practices of All Departments*

## Steam-Heating Electric Trains in Switzerland

Single-Phase Current at 15,000 Volts Is Applied Directly  
to the Water in a Specially Designed Boiler, Thus  
Generating Steam Which Is Used for Heating

BY WILLIAM A. ROSENBERGER, M. E.  
Zurich, Switzerland

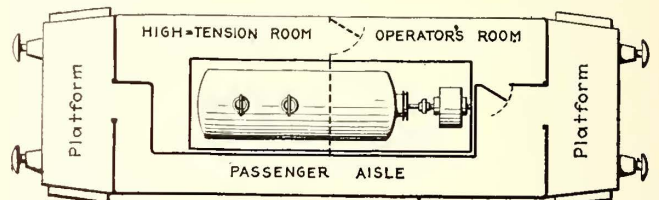
WITH electrification of the Swiss Federal Railroads in full swing, the problem of heating the trains became an important and somewhat disagreeable side issue. Although early during the recent war Swiss industry had been forced to seek ways and means to replace that part of their coal and fuel imports which their neighbors could no longer let them have, it was not until some time after the conclusion of the great conflict that Brown Boveri & Company, in Baden, Switzerland, together with Sulzer Brothers in Winterthur, succeeded in applying directly and for the first time, a single-phase 15,000-volt,  $16\frac{2}{3}$  periods current for the purpose of steam creation by electricity. When I say "directly" I mean without transformation. It is, therefore, now possible to send a 15,000-volt current directly into the water of a suitably constructed boiler, in which all the electric energy is transformed into heat and used to generate steam. But, if this is possible with a 15,000-volt single-phase current, it is also possible with a 26,000-volt three-phase alternating current, which certainly represents a considerable advance in a short space of time, for only two years ago the outlook of ever being able to use a tension exceeding 8,000 volts was far from promising. Today, however, the problem seems to be solved so that in Switzerland electric trains will be heated by "electric steam."

The first outfit of this kind made its maiden trip, a few weeks ago, between Bern and Thun. The electrical steam generating plant of this heating wagon, in the manufacture of which the two previously mentioned Swiss firms had each their part, is installed in

a four-axle freight car altered for this purpose by the Swiss Federal Railroads. About the only outward distinguishing sign is the pantograph current collector, a trapdoor-like arrangement on top of the roof, and a few insulators.

The accompanying illustration shows the first experimental heating wagon of this type coupled in between two passenger cars.

The heating wagon has two rooms and an aisle running straight through which serves as a passageway for travelers. The boiler proper is of the horizontal type, approximately 10 ft. long by 4 ft. in diameter.

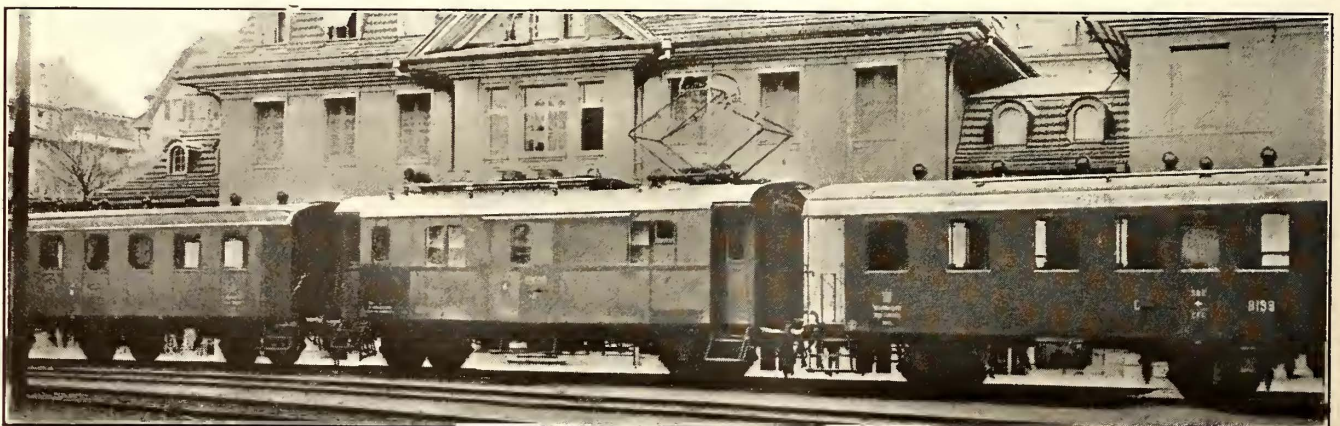


INTERIOR ARRANGEMENT OF HEATING CAR

At one end is located a water circulating pump with its driving motor, the whole being placed over a rectangular water supply tank.

The high-tension room contains a 4-kva. transformer for the pump driving motor, high-tension fuses, current and voltage transformers, disconnecting switches and the main oil switch. This equipment is well protected by a wire mesh partition, having a small passage door which is interlocked with the main oil switch drive in such a manner that the operator cannot enter the high-tension room unless the oil switch is opened.

The boiler, which is heavily insulated against heat losses, has two steam-tight current-inlet insulators, of which each connects with a system of electrodes of special design, developed by the engineers of Brown Boveri & Company. These electrodes are easily adjustable from the operator's room while under tension, thus permitting of varying the load between 300 and



EXPERIMENTAL ELECTRIC STEAM HEATING CAR IN THE MIDDLE OF A TRAIN



1,200 kw. according to requirements. As a rule one of the electrodes is quite sufficient for heating under average operating conditions, so that the second electrode constitutes a reserve to be used only while starting to heat up a train or during most severe cold. According to Swiss practice, we calculate for heating purposes with an expenditure of energy of from 5.7 to 8.5 watts per cubic foot, or figuring with an average passenger coach of 4,000 cu.ft. each coach would require from 23 to 34 kw., including all losses. A single electrode could therefore supply sufficient steam to heat a ten-car passenger train under average conditions. This heating wagon is placed as near as possible to the center of the train in order to reduce steam transmission losses to a minimum.

While it is by no means impossible or even impracticable to provide for an entirely automatic operation of this equipment, it was thought preferable with this first experimental outfit to avoid all unnecessary complication by providing for an attendant. Nevertheless there are a number of interesting automatic safety provisions, such as the automatic lowering of the current collector when the door between the operating room and the high-tension room is opened, which, at any rate, is only possible after the main oil switch has been opened. For emergency cases a safety pull is provided by means of which the oil switch is opened and the current collector lowered, while at the same time trapdoors, provided in the roof, are raised to offer escaping steam an unrestricted outlet to the open air and facilitate ventilation.

The oil switch also opens automatically in case of any short-circuit within the boiler or any part of the line between oil switch and boiler, as it does also as soon as the speed of the pump driving motor drops off below a certain minimum, or when the air pressure holding the current collector in position reaches a certain minimum value.

In addition to the 15,000-volt heating wagon, two others operated at 1,000 volts have been tried out by the Swiss Federal Railroads. One of these, also a Brown-Boveri-Sulzer product, is now doing satisfactory service on the Gotthard line, between Erstfeld and Bellinzona. This low-tension heating wagon is coupled directly with the electric locomotive and derives its current from the transformer of the latter. Its operation is, contrary to the 15,000-volt heating wagon, entirely automatic.

### Removable Unit Type Circuit Breaker

TO MEET the demand of central stations for a high interrupting capacity breaker of the removable unit type, to replace breakers inadequate to handle the existing interrupting capacity of a section, the Condit Electrical Manufacturing Company has placed on the market the type F-10 oil circuit breaker. This circuit breaker is compact and will go into most any cell formerly occupied by an oil circuit breaker having an interrupting capacity between 1,200 and 2,000 amp. per phase at 15,000 volts. As the interrupting capacity of the circuit breaker is 10,000 amp. per phase at 15,000 volts, this allows central stations to increase the interrupting capacity of their equipment from five to eight times.

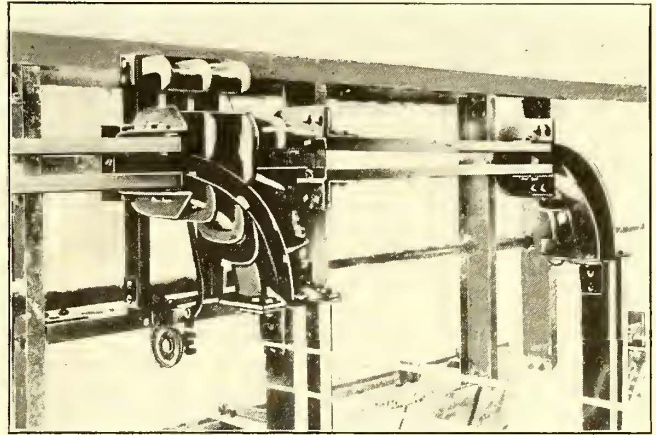
As these breakers are not supported from any cell structure it is only necessary to install the tracks on the cell floor. No overhead framework is necessary and

in general no change is required in the masonry, bus-bars or connections to the breaker.

Type F-10 oil circuit breakers are built in capacities from 500 to 1,200 amp. at 15,000 volts and 500 to 800 amp. at 25,000 volts, single throw, and can be furnished for single or multiple operation.

### New Trolley Transveyor System

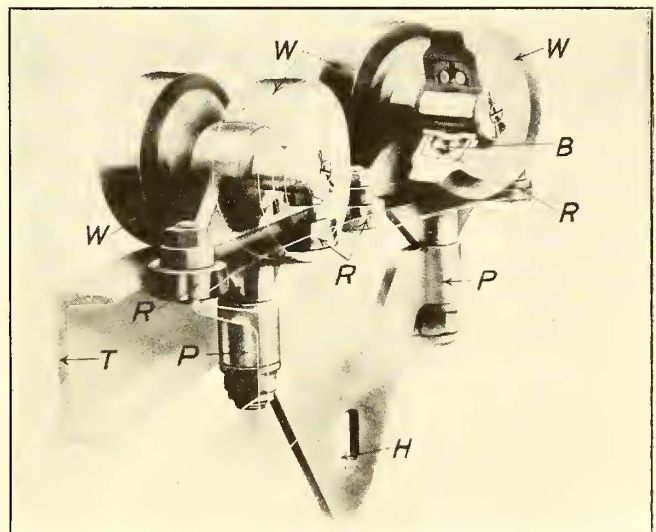
THE Whiting Corporation of Harvey, Ill., has placed on the market what it terms the short-turn overhead trolley system. This is a comparatively new departure, but several successful installations are now in use. The track consists of two parallel standard rolled channels 2½ in. between flanges and held in place



STANDARD SWITCH AND CORNER

by clamps. It is designed to carry loads with no intermediate supports except at the splices, corners and switch points. The corners and switch connections are interchangeable, so that when found desirable a right corner can be removed and a double switch or universal switch can be bolted in the same place. All of the short-turn corners and switches have a track curvature of 18 in.

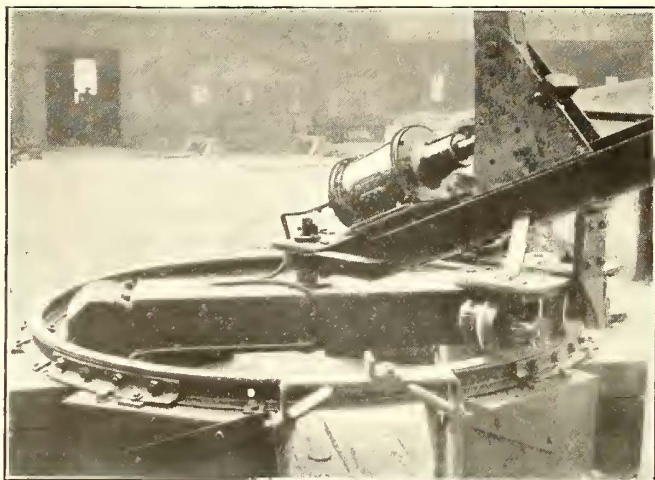
The track equipment is arranged for two-wheel, four-



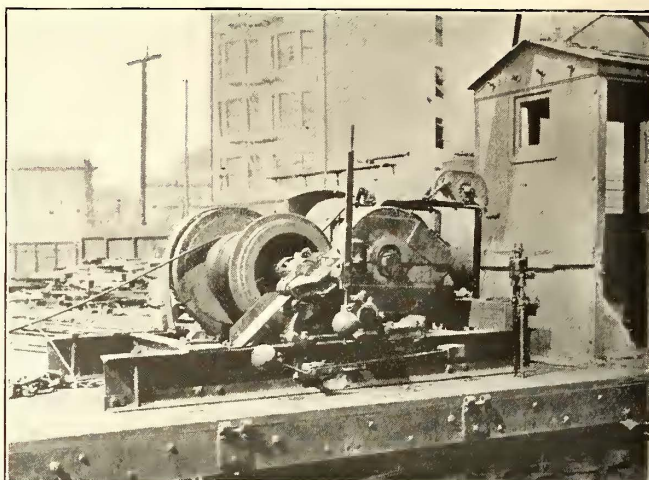
VIEW OF SHORT-TURN TROLLEY

W, wheels. B, ball bearings. R, guide rollers. T, supporting channels. P, pivots. H, hoist connection.

wheel or eight-wheel trolleys. These trolleys have ball-bearing wheels and guide rollers which run between the toes of the channels.



TURNTABLE AND AIR CYLINDER FOR DERRICK OF PLOW CAR



WINCH MOUNTING AND ACCESSORIES

### Car Equipped to Operate Power Plow

A CAR recently fitted up in the shops of the Market Street Railway of San Francisco to provide a convenient and economical means of plowing up the right-of-way, consists of an ordinary work car from which one of the cabs was removed and on which were mounted a winch with its accessories and a derrick. The arrangement has been successful in doing all necessary plowing and rooting out ties and concrete along the right-of-way. Furrows 11 ft. outside the rails have been made, and where anchorage for a snatch block is available this distance of offset could be greatly increased. This method of plowing with power has been used for eight years but the power has always been furnished by a 6-ton derrick car. A few months ago plowing had to be done while the derrick car was on work from which it could not be spared. The car here described was constructed to serve in the emergency.

The plow is drawn by a cable running from a 3-ton single-drum winch driven by a GE-1,000 motor with an ordinary type K controller. The cable passes between guide sheaves at the center of the rear end of the car.

Additional sheaves are also provided on either corner so that the line can readily be offset this far when desired. To offset the hauling line still further, an anchor chain and snatch block are attached to the end of a tie rod in the adjacent track (if the work is between two tracks). By adjusting the length of the chain the offset can be regulated as desired. The side of the snatch block is hinged so that the cable need not be threaded through it but can be dropped into place by opening up the side. The car is used on a temporary portable T-rail track at the side of the track trench being plowed.

For lifting the plow off the ground the car is provided with a power derrick operated by a 10-in. air-brake cylinder which takes air from the air reservoir of the car itself. The 1-ft. throw of the piston in this brake cylinder is multiplied by the mechanical arrangement shown in the accompanying illustration in a ratio of 1 to 8, so that for the 1-ft. movement of the piston the derrick hook is moved a distance of 8 ft., which is sufficient for handling the plow.

The mechanical arrangement of lever and rope is such that the ratio can be easily and quickly changed



PLOW IN OPERATION—SPARE PLOW SUSPENDED FROM DERRICK WINCH ON THE PLOW CAR

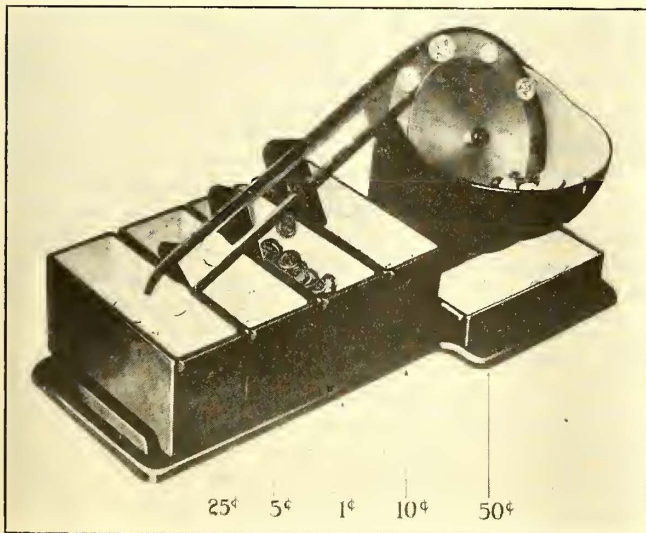
to any of the following: 1 to 8, 1 to 6, 1 to 4 or 1 to 2. The 1 to 8 ratio is sufficient to raise a weight of 500 lb., this capacity increasing of course as the ratio is decreased. The plow weighs about 450 lb. The derrick boom is swung by hand into any desired position on a circular track built up on the car platform. This track has a stop to prevent a continuously circular motion, thus insuring that the flexible air supply line will serve the cylinder in all positions of the boom. The air cylinder is operated by an ordinary brake valve near the winch.

No return line is used on the plow with this rig. When a new furrow is to be started the derrick raises the plow and the car moves down the track with it to the point where the furrow is to start. After setting the plow in place the car moves back, paying out the cable as it goes, until the far end of the furrow has been reached. The plow is then drawn up to the car and the operation repeated.

The details of this device were worked out by W. D. Chamberlin, principal assistant engineer. B. P. Legare is engineer of maintenance of way, Market Street Railway Co.

### An Inexpensive Coin Counter

**A**N EXTREMELY simple and inexpensive coin-counting machine which may be purchased outright rather than used on the rental basis usually required has been made available by the Coinometer Company, Detroit, Mich. This consists of a motor-driven disk which picks up individual coins of all denominations from the container in which it revolves, lifts the coins up to the top of the disk, whence they roll by gravity down an incline extending over compart-



SIMPLE AND INEXPENSIVE COIN-COUNTING MACHINE

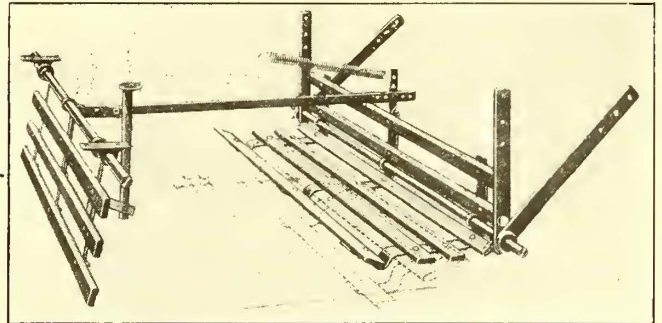
ments for receiving the coins. This incline has a graduated opening which permits the coins to drop through into the proper compartment as they reach the opening of proper size. The disk and incline are mounted in an inclined position so that, while carried edgewise, the coins lean back against the support and therefore drop through the opening at the first opportunity.

It is claimed that the machine will count accurately 1,200 coins per minute or 72,000 coins per hour. It is said to sort a mere handful or a bushel of mixed coins with guaranteed accuracy at the rate noted above and

every coin is always in plain sight with no danger of lost money. It weighs less than 23 lb., is 21 in. long by 10 in. wide and 10 in. high. It is constructed of solid metal throughout and finished in black enamel.

### A New Life Guard

**A** NEW spring life guard has been placed on the market by the Root Spring Scraper Company, Kalamazoo, Mich., which is claimed to have very light weight. Spring steel is used for every part subject to possible breakage, thus giving a flexibility which tends to overcome breakage and also decreases the probability of injury to a person picked up. The drop



NEW LIFE GUARD THAT IT IS CLAIMED WILL NOT RATTLE DOWN

fender is made entirely of spring steel with the members bent in such a manner that they will ride over the rail and pavement without catching and yet pick up any object encountered.

The operating device connecting the gate to the drop fender is made in such a manner that the trip break is below or slightly past center when the guard is in normal position. There is thus claimed to be no possibility of the guard being tripped, due to vibration or shock. It is claimed, however, that the guard drops very quickly, the speed of this action being increased by a heavy coil spring, when anything strikes the gate.

### Plan to Reduce the Time and Cost of Air Seasoning Wood

**I**N CO-OPERATION with the sawmills and wood utilization plants throughout the country, the Forest Products Laboratory, Madison, Wis., is organizing an extensive field study on the air seasoning of wood. This study, it is believed, will be of extreme interest to the lumber manufacturer and to the wood-using industries. The purpose is to determine the piling practice which will result in the fastest drying rates consistent with the least depreciation of stock, the least amount of required yard space, and the least handling costs.

The air seasoning of wood is an old practice. No systematic attempt has ever been made, however, to work out the exact conditions under which drying time and drying costs can be reduced to a minimum. The new project will furnish a comparison of the effects of such piling variables as sticker heights, the spacing of boards in layers, the heights of pile foundations, and the directions of piling with relation to prevailing winds and yard alleyways.

A tentative working plan of the air seasoning study has been prepared by the Forest Products Laboratory, and copies are being sent to the secretaries of the various lumber and wood-using associations, state foresters, forest school heads, and others eminently qualified to comment on the plan.

## Winning Public Support and Confidence\*

Some Facts Which Few of the Public Know—The Industry's Responsibility to Assume Leadership and Let the Public Know

By George L. Myers

Assistant to the President Pacific Power & Light Company, Portland, Ore.

THE public service industry is in greater need of the support and confidence of the people than any other industry because of the powers exercised by government in its control. It is dependent for its success upon the nature of regulation, which reflects the political policy of the state. The policy in turn is determined by the public sentiment, which is nothing but the expression of the people's understanding and knowledge. The essentials fundamental to wholesome and constructive public sentiments are service and knowledge. Service must be courteous, efficient and adequate. The personnel of an organization and the physical stability of its property determine the nature of its service.

### ANTIPATHY MUST BE OVERCOME

Irrespective of the fact that the public service industry is controlled as is no other industry, in none other is there more antipathy on the part of the public. The fundamental reasons which come to mind as responsible for this antipathy are the magnitude and volume of the business, the conditions of natural monopoly within the territories served, the exclusive nature of the service, the quasi-governmental function of it, the convenience in its use and the impersonal relationships. The volume of the business in dollars and cents too often appeals to the public's imagination as the measure of profit rather than the return in percentage upon the investment when there is no understanding of what actually constitutes profit. The condition of natural monopoly and the exclusive nature of the service strengthen the conviction that there must be enormous profits. Also the sovereign powers vested in a public service company and the essential and universal nature of the service give to the public service the attribute of a government service. Many pay nothing directly for what they get out of government. People seem to have an inherent sense of propriety without responsibility in a public service company in return for the privileges given it to do business, which leads them to regard a public service company as a vendor of benevolent service.

Public utility service today in general is not supplied by local plants with their operations localized, but by what might be properly termed for purposes of differentiation a system or systems. Capital for development is drawn from all sources of the country, and furthermore control is often vested far from the existing field of operation. These conditions have broken down the

close personal or local relations which formerly existed and require new policies that will break down the barriers which have developed.

Too few people know the essential facts and principles of public service finance. There is still much agitation about watered stocks, although the element of capitalization today is not the basis for rates and return. Many have the impression capital in public service companies is closely held and that only a few participate in the earnings available to pay interest and dividends. The fact is that about 1,400,000 men and women in the electric light and power industry alone are owners of stocks and bonds and more than \$300,000,000 of the assets of insurance companies is invested in its securities. In excess of \$1,700,000,000 in bank funds are invested in public utility securities. Therefore, while there has been a tendency toward centralization in management and control in the interests of greater efficiency and economy, there has been a growing decentralization in ownership.

Another factor is that there is no general knowledge of the extent to which a public service company is held accountable to authorities of government for its conduct nor of the restrictions placed upon it. The measure of government control to safeguard and protect the public interests should become common knowledge. The orders and decisions of commissions and the opinions of courts must be made clear to the public mind, and their influence and effect brought to public recognition, not alone in cases of local interest and concern, but in those of state and national determination as well.

### RESPONSIBILITY IS ON INDUSTRY

If we will concede the public must have a better knowledge and understanding of the facts concerning the industry before it can prosper as it deserves, then the important consideration is the policies and methods whereby this result may be accomplished. The responsibility is upon the industry, and it must assume the leadership. Various means may be taken to get the proper contact with the public whereby the proper public sentiment can be developed, but probably the most effective means is through the press. The press must be impressed with the purpose and spirit of the movement. Its confidence must be inspired and interest aroused. There is another important field for education within the industry. There is not a sufficient understanding of the facts among those who are employed in it. Each department head and employee is not without his coterie of friends and points of personal contact. The personnel should be made to understand that the pros-

perity of the company and the industry depends upon public sentiment and that they have their part in making it favorable or unfavorable, which in turn is reflected in their prosperity.

The company publication, or what might be termed in common parlance "the house organ," can be made a most effective means for education, as it can be used to cement the organization into a more interested whole.

The industry should not only be alert to the problem of getting the public informed, but it should act in a manner to command public respect. It is often the policy not to dignify unjust criticisms and untruthful attacks with refutation, as this gives rise to controversy, and most utilities seek to avoid controversy, but why let the lie stand to shame the truth when facts are available?

A good deal of what has been said may be considered by some to be idealistic, but it is an idealism which can be made of practical effect if there is only the will to do it. The industry is in need of some idealism and a spirit which values the worthiness of its service and a faith in the common sense and fairness of the people.

## New England Club Has Outing

Delegates Frolic at Aldrich Lake and Enjoy Trips to Mount Tom, Where Banquet Closed the Day's Festivities

THE annual outing of the New England Street Railway Club, of which Edward Dana of Boston is president, was held on July 28. The Holyoke Street Railway and its officials were the hosts for the day. Probably no other single outing of the club was ever more successful, not only from an entertainment point of view but in reflecting what can be accomplished by the pull-together spirit that exists between the railway company, its employees and other local civic organizations that have the welfare and growth of the community at heart.

The day started with an inspection of the shops and carhouses of the railway company in Holyoke, after which three special cars took the delegates and invited guests to Aldrich Lake where sports were enjoyed. The baseball game between the railway and supply men ended in a tie after six innings, hence the silver mounted bat which was won last year by the supply men still remains in their possession. John Wilkinson, Boston Elevated Railway, captained the railway team, and Joseph G. Dellert of Boston was the captain for the supply men. Other sports and swimming races were also enjoyed.

Luncheon was served at the lake, after which the party again boarded the cars for an inspection trip, via Amherst, Old Hadley and Northampton en route to Mountain Park. Opportunity was thus given to see a large part of

\*Short abstract of address at the Fourteenth Annual Convention of the Northwest Electric Light and Power Association, Multnomah Hotel, Portland, Ore., June 16, 1921.

the trolley system, the country served, the numerous colleges that abound in this territory, and other historical points of interest, of which there are many. Arriving at Mountain Park shortly before 4 o'clock, the party was entertained at a special matinee of six acts by the artists playing at the theater. After the show came the trip up Mount Tom over the incline railway. Prior to dinner on the summit the delegates had an opportunity to view the wonderful scenery of central Massachusetts from the vantage point of the Summit House. Promptly at 7 o'clock 210 delegates sat down to a real Mount Tom roast chicken dinner. Souvenirs of Holyoke's industrial life were furnished by the Chamber of Commerce to each visitor, consisting of writing paper, loose-leaf booklets or pads, and spools of thread.

Following the dinner a short business session was held at which twenty-five new members were voted into the club, making a total of ninety-one since President Dana started his campaign for increased membership.

Mayor John F. Cronin of Holyoke, who had been with the party all day, extended an official welcome on behalf of the city. A vote of thanks was extended to L. D. Pellissier, president of the Holyoke Street Railway in appreciation of his interesting efforts and the success that has attended them. Replying, he expressed his keen appreciation that the club had selected Holyoke for the outing. He then presented on behalf of the club a Seth Thomas chime mantel clock to Fred F. Stockwell, the club's treasurer, for his unselfish services, and a purse of gold to John W. Belling, the secretary. Acceptable remarks were made by both recipients. After the banquet moving pictures provided entertainment including a film that the Holyoke Street Railway has just had prepared for advertising Mount Tom's beauties throughout the country.

The committee in charge consisted of W. W. Field, Boston, chairman, with L. D. Pellissier, the Holyoke chairman, and George E. Pellissier as vice-chairman.

## Regulation of Public Utilities

Regulatory Laws Must Conform to Economic Laws—Division of Regulation Between Judiciary and Legislative Authorities—Utility Boards Should Be Composed of Men of Broad Vision

By HARVEY S. CARR\*

Carr & Carroll, Attorneys, Camden, N. J.

FROM the creeping, creaking stage-coach and the isolated inn of Plantagenet, England, to the vestibuled train the de luxe, the fast freight line, the whaleback steamer and the towering grain elevator of the America of today is a far cry. Yet it is to these humble and remote sources—the state regulated innkeeper, hack driver, baker, farrier and tailor of mediæval times—that the United States Supreme Court turns in search of the basic principles governing the right of the state to regulate the great modern public utilities that touch the daily life of millions of our people.

In God's providence the empire builders were not discouraged by regulation—the Harrimans, the Hills, the Morgans, the Goulds and the Vanderbilts—these men of vision and constructive imagination were not preceded by heralds bearing aloft "blue sky" banners, with that soul-inspiring legend "Safety First." Neither were they accompanied through the forests and over the majestic rivers and mountains by the regulatory bodies of forty-eight separate states. Some of them may have been rude and crude, whiskered and wicked, but they did great things and posterity is their debtor.

With the concentration of power came abuses, actual or potential, rebates, discrimination and oppressions, and the public sought to protect itself by regulatory statutes, boards and agencies. As a result of a long legal history, it may now be accepted as

settled that the power to prescribe rates is legislative. The power to determine whether rates prescribed would, if enforced, impair or destroy rights of property that are protected by constitutional law is judicial.

### THE VALUE OF THE SERVICE TO THE CONSUMER

It is unfortunate that the method of review by the United States Supreme Court appears to preclude an examination and disposal of the whole subject matter of the inquiry. The cases reach that court usually upon the initiative of the public utility company and under the Fifth or Fourteenth Amendment upon the claim that the instant rate results in the taking of property without due process of law and is therefore confiscatory.

This necessarily limits the determination of a finding that a particular rate is or is not confiscatory. Hence, the basis of the adjudication must always be the aggregate return on the capital invested and not the value of the service to the individual user.

So the supposed danger to the consumer resulting from excessive charges growing out of monopolistic control is lost sight of and never becomes a subject of adjudication. The utility is on the defensive and seeks to protect the confiscation of its property by the public. The Supreme Court can do no more than to enforce a vote upon confiscatory legislation, hence the primary question for which regulation was designed, viz., is the particular rate or charge of the utility unjust or oppressive? remains unadjudicated.

It seems a curious anomaly of our judicial system that the very question that state regulation was intended to cover cannot be adjudicated by the court of last resort.

### ECONOMIC LAW AND STATE REGULATION MUST COINCIDE

To the extent that a rate or regulation is in conflict with economic law it is erroneous. Public utility boards must adopt the broad economic view and must enforce a policy based thereon whether it is immediately popular or not. Rate questions become in time the issues of a political campaign with all of the accompanying rancor. It is difficult for a utility board not to be influenced by such clamor, especially since in New Jersey it combines with legislative power the powers of prosecutor, judge and jury, and institutes proceedings on its own initiative.

The disputes that come before a utility board for determination are usually far more serious and important than suits which come before courts of law or equity. A determination of a utility board in a populous state may touch the daily life of millions of persons and affect property values running into hundreds of millions of dollars. An erroneous decision in an important matter always affects the public injuriously. If the rate allowed is too high, the injury is direct. If too low, the injury, although consequential, may be far more serious in the resultant impairment of service and impairment of the confidence of the investing public, from whom alone the needed capital for extensions and improvements can come. Hence, it is of the utmost importance that a public utility board, wielding such immense power for weal or for woe, and whose findings as a practical matter are subject to but scant supervision by appellate courts, be composed of men of courage, vision and of broad and accurate economic views. Many of the men who have served on these commissions and many of those still serving are of this character. Especially is this true of our present commission in New Jersey.

Ultimately informed public opinion will control the situation. If this were not so democracy would not exist. Where the utility has taken the public into its confidence and cultivates friendly relations with its customers, conditions are much improved, and reasonable requests for modification of rates have not been seriously opposed by the public.

### CONCLUSIONS

1. Rates must be just and reasonable.

2. Fairness of the individual rates should be reached by allowing the utility to earn in the aggregate a sufficient sum to pay its operating cost and the accumulation of a reasonable surplus to provide for the unforeseen contingencies of the future. This should be the basis of rate making.

3. Rates must be sufficient to attract capital.

\*Abstract of paper read before the Pennsylvania State Bar Association at Asbury Park, June 29, 1921.

4. Rates must not be so low as to be confiscatory.

5. Efficient and economical operation should be required, encouraged and rewarded, and should be reflected in profits and dividends.

6. The rate-making machinery should be in the hands of a special tribunal composed of men trained in that class of work. The rate must be such as will afford protection of the individual consumer from oppressive rates, and yet such that the utility will be permitted to live and give adequate, efficient and satisfactory service.

7. The legal machinery of review is inadequate in that it does not usually permit a review of the merits of the entire controversy.

[The complete paper gives a very able presentation of the historical development of Supreme Court regulatory decisions, with clear interpretations of each decision supported by legal opinion.—EDITORS.]

### Pennsylvania Electric Association

THE Pennsylvania Electric Association will hold its fourteenth annual convention from Sept. 7 to 10 inclusive at Bedford Springs, Pa. There will be morning and afternoon sessions except on Saturday when the final session will be held in the morning.

The program opens on Wednesday evening, Sept. 7, with the reception to the president. On Thursday morning the chief features will be the address of the president, Henry Harris, of Wilmerding; the appointment of auditing and nominating committees and a paper on "The Super-Power Survey as It May Affect Pennsylvania," by Harold Goodwin, Jr. The afternoon session will be a commercial meeting with a number of reports and papers. The technical session will be held on Friday morning, Sept. 9, while the accounting session will be held on the morning of Saturday, Sept. 10. Prominent speakers will address the public policy session on the evening of Friday, Sept. 9.

A feature of the entertainment will be furnished by the Westinghouse Electric & Manufacturing Company of Pittsburgh. Each evening the Westinghouse band will play at Pittsburgh and the concert will be reproduced by means of the radiophone at Bedford Springs.

A. L. Atmore, 1000 Chestnut Street, Philadelphia, is chairman of the program committee, and W. K. Kerford, Philadelphia Electric Company, is chairman of the entertainment committee.

### Industrial Advertising Conference

THE importance of industrial advertising and the necessity of specialized treatment in its development are recognized in a plan to hold an Industrial Advertising Conference at the Milwaukee Convention (1922) of the Associated Advertising Clubs of the World. The movement is being promoted by the Engineering Advertisers' Association of Chicago and the Technical Publicity Association of New York.

## American Association News

### How Taxation Affects Public Utilities\*

Public Utilities Are a Separate Class in Regulation but Are Not So Treated in Taxation—The Supply of New Capital Is Limited by the Effects of the Present Taxation System

By P. H. GADSDEN

President American Electric Railway Association; Chairman of Joint Tax Committee of A. E. R. A., N. E. L. A. and A. G. A.

WE URGE that public utilities be placed in a special class for the purpose of taxation, so that the burden of Federal taxation to be imposed upon them may be determined in the light of the fact that they are regulated industries. Public utilities are already by law treated as a special class for everything except taxation. Their rates and the selling price of their products are fixed by law. They are compelled to buy their labor and material in the open market and to sell at prices fixed under regulation. The public utilities are segregated in a separate class with reference to their operating expenses. The kind and quality of the service rendered by them is largely specified by law. The ordinary business man can adjust his affairs to the varying conditions of the time. In periods of depression he can retrench, reduce his activities, and cut off his expenses. The individual can do the same. The utilities cannot. They can neither adjust their revenues to meet increasing operating expenses or increased taxation, nor curtail their facilities for business operations.

Again, they are placed in a special class so far as undertaking new business is concerned. The merchant or manufacturer can refuse to take on business when he sees no profit in it. Public utilities must furnish electric transportation, gas, electric light, and power to all who apply for it under regulations fixed by law.

But when it comes to taxation, public utilities have up to this time been treated as any other business corporation, notwithstanding the fact that a public utility's return on its investment is limited by law, whereas the ordinary business corporation is free to make any profit which business conditions will permit.

For these reasons we urge the Ways and Means Committee to consider adopting a permanent policy of setting aside all public utilities—that is, regulated industry, in a special chapter to be treated separately for the purposes of Federal taxation.

2. The American Electric Railway Association, American Gas Association, and the National Electric Light Association, earnestly protest against any increase in the normal income tax on

gas, electric railway, and electric light and power companies, and urge that the normal income tax on public utilities be kept as at present at 10 per cent and not increased along with business corporations generally as has been proposed. The reason for this distinction is apparent to anyone who is conversant with the history of public utilities during the last four or five years. It is admitted that of all classes of business enterprise, the public utilities have suffered the greatest injury as a result of the war. For several years when every other class of business was prospering beyond anything ever anticipated, the net income of the public utilities gradually, month by month, diminished; in many cases dividends on stocks were passed, and even interest on bonds left unpaid at a time when industry generally was enjoying an unparalleled prosperity.

We urge, therefore, that it is only fair that the burden of Federal taxation on public utilities should be made lighter than on business generally. Their rates for service, being regulated by law, are not easily adjusted to increased expenses. Owing to the local character of electric railways, gas, and electric light and power companies, it was not found practicable during the war for Congress to take any action to relieve their condition such as was taken in the case of the steam railroads. They have had to bear the full brunt of increases in the cost of labor and materials without any assistance from the Federal Government, notwithstanding the fact that it is now clearly recognized that the services they render are essential to the national life. Here is an opportunity, however, for Congress to show its appreciation of the plight of the public utilities of this country and afford them some measure of relief. It was in recognition of these facts that the committee of the National Industrial Conference Board in its report recommended that the income tax on public utilities be retained at 10 per cent.

3. *Tax on undistributed income*—A tax on undistributed income would fall with peculiar hardship upon public utilities. In the first place, in a regulated industry there is no opportunity for unusual or excessive earnings. The rate of return is placed at a maximum which rarely exceeds 8 per cent, so that with public utilities it is not possible to declare an 8 per cent dividend

\*A brief presented to the Ways and Means Committee of the House of Representatives as a part of the record of appearance before that committee by W. V. Hill, representing the A. E. R. A., N. E. L. A. and A. G. A.

and retain an equivalent amount in the treasury of the company as undistributed earnings. The reason which is generally urged to support the tax on undistributed income does not apply to regulated industry. There is one reason, however, which, when properly understood, would seem to show that it is clearly against the public interest that such a tax should be applied to public utilities. Owing to the extraordinary increase in the cost of operations, both during and since the war, with the tardy and meager increases in rates which have been allowed, the public utilities as a class have been forced to suspend the payment of dividends and to utilize any small amounts of net income for the purpose of providing for those necessary extensions and betterments of their service which are insistently demanded of them by the public. It is generally recognized that the credit of public utilities has been affected injuriously by the experiences through which they have been forced to go. For years they have been unable to secure the additional new capital necessary to provide the extensions and betterments to plant and facilities to keep pace with the development of their respective communities. In this connection I refer the committee to that portion of the report of the Senate Committee on Reconstruction and Production referring to public utilities. This report shows that public utilities have had to postpone extensions and enlargements of their plant and facilities for years. At the same time, a certain amount of such extensions and betterments have had to be made.

They have been made out of the net income of the public utilities which otherwise might have been declared by way of dividends. The tax upon undistributed income of public utilities would still further reduce the available funds now being used for extending the railway, gas and electric light and power services to the consumers of this country. If such a tax is seriously considered by this committee we would urge that either public utilities be expressly exempted, or that the paragraph should be so worded as not to apply to earnings which are reinvested or held for reinvestment in the property within twelve months after the year in which they accrue, or which, together with the earnings distributed, do not exceed, say, 10 per cent return on the value of the property.

4. *Tax-exempt securities.*—While public utilities, unfortunately, are not subject to any excess-profits tax, and while their income taxes amount to a very small amount of money—they amounted in 1918 to only about \$12,000,000 for the three industries I represent—while it is true that our stockholders and bondholders have suffered so that their taxes have been very largely reduced, I want to call the committee's attention to the serious burden which the excess-profits taxes and the high surtaxes have in an indirect way upon the public utility business.

We have recently had a study made of the effect of the surtaxes and the income taxes upon the sale of public-utilities securities. We have been very much disturbed to find that under the present fiscal and taxation laws of this Government the taxpayer who is subject to a surtax of over 3 per cent can not afford to buy a public-utility security paying 8 per cent or less in preference to a 5 per cent tax-exempt bond. That means that practically the only purchases of our securities must come from the people who are in the \$10,000 class. The reason for it is that the public utility, being regulated by law, its earnings being kept down to practically 8 per cent, cannot, of course, have any long-time issue securities of a greater rate of interest.

#### \$1,250,000,000 BEHIND

I am not trying to inject an argument for exemption of securities, but I am showing how vitally interested public utilities are in any law which will spread out the burden of taxation and which will make it possible for Congress to reduce, if not cut out, these very high income taxes. The public utilities of this country, including the steam railroads, must every year find new money for their extensions and betterments. The group I represent requires about \$75,000,000 a year. Altogether, including the steam railroads, we need about \$2,000,000,000 of new money every year. That money must be obtained in the open market in competition with these municipal securities. No man with a high income can afford to buy our securities, because we cannot afford to pay more than 6, 7 or 8 per cent, as the laws say we cannot get more than that amount. The investor is being driven by that process away from public utilities into municipal bonds, building schoolhouses and courthouses and public roads. The effect of that is this: In the first place, the \$2,000,000,000 of betterments which the public requires can not be made. They have not been made in four years. We estimate that public utilities are behind in actual necessities—that is, the three public utilities I represent—at least a billion and a quarter now, owing to the inability to get money.

#### DRIVEN TOWARD MUNICIPALIZATION

The second effect is that as we fail year by year, owing to our inability to get this additional new capital to measure up to the standard and growth of our various communities and fail to render the facilities which the communities must have, there is a growing dissatisfaction in the communities against our service and an increasing demand on the part of the population to take them over. It is quite apparent that the public will say: "If you cannot raise money, we can; we can get all the money we need at 5 per cent." Therefore, we reach this anomalous situation that while the political policies of this Government have been definitely and firmly fixed in opposition

to the municipalization of these utilities, the financial and fiscal policies of the Government are inexorably driving us into it. Therefore, any tax whose tendency is to spread out the burden; any tax which will raise money sufficient to enable this Government to relieve the higher brackets on the surtax and the income tax is working in the interest of the public utilities and immediately in the interests of the users of those facilities all over the country.

#### Engineering Association Nominations for 1922 Officers

THE committee on nominations for the Engineering Association has reported as its selection for officers for the ensuing year as follows: President, C. S. Kimball, Washington Railway & Electric Company, Washington, D. C.; first vice-president, L. C. Datz, American Cities Company, Birmingham, Ala.; second vice-president, H. A. Johnson, Metropolitan West Side Elevated Railway, Chicago, Ill.; third vice-president, A. B. Stitzer, Ford, Bacon & Davis, New York. These gentlemen, together with Charles H. Clark, Cleveland Railway; Roy C. Cram, Brooklyn (N. Y.) Rapid Transit Company; Daniel Durie, West Penn Traction Company, and Charles Rufus Harte, the Connecticut Company, New Haven, Conn., were nominated as members of the executive committee. J. W. Welsh was nominated for secretary and treasurer.

The report is signed by Martin Schreiber, Public Service Railway, chairman; C. C. Beck, Ohio Brass Company, Mansfield, Ohio; D. E. Crouse, Rochester & Syracuse Railroad, Rochester, N. Y.; John Lindall, Boston (Mass.) Elevated Railway, and F. McVittie, New York State Railways, Rochester.

#### Safety Car Committee Meets

THE American Electric Railway Association's committee on safety car operation had a meeting on Aug. 2 at the association headquarters, New York City. Those present were R. P. Stevens, chairman, Republic Engineers, Inc.; James P. Barnes, Louisville Railway; H. B. Flowers, United Railways & Electric Company, Baltimore; W. H. Heulings, Jr., J. G. Brill Company; and C. W. Kellogg, Stone & Webster, Inc.

The scope of the committee as outlined by the executive committee of the association was considered, together with various suggestions from several members, and it was decided to confine the work this year to the consideration of problems closely related to what might be termed as the general aspect of safety car operation as affected by legislation and regulatory action as well as public and labor relations. A brief will be prepared dealing with the present use and benefits derived from safety car operation, and a simple questionnaire will be sent out to collect information regarding the number of the various types of cars operated by one man which are now in use.

## Recent Happenings in Great Britain

### Coal Strike Settlement Opportune—Tramway Showing Better— Glasgow and Manchester Do Well

(From Our Regular Correspondent)

After three months—the longest coal strike on record in England—the coal miners' strike came to an end on June 28 and on July 4 work in the pits was resumed as far as it was possible at the time, many mines having been flooded and others seriously thrown out of gear. A ballot had been taken some little time before in which a large majority of the miners voted—the percentage who troubled to vote was quite small—refusing to accept the terms offered, though these were accompanied by a Government offer of £10,000,000 for easing the period of reduction of wages.

**A**N ATTEMPT was then made to call on other trades unions by way of sympathetic strike, but it failed miserably. Following this the executive of the miners' union eagerly sought conference with the mine owners for a settlement. The settlement was confined to a question of wages and the national pool of profits demand was dropped like a hot coal.

The new conference was held in the end of June and an agreement reached which professes to be permanent. The miners are to get the £10,000,000 so far as it is required to ease specific hard conditions during three months' progressive reduction of wages. Thereafter the industry is to be on an economic basis, with wage boards to settle all disputes.

The most important point is that the profit-sharing principle is to be more fully adopted than it has ever been before, the workmen obtaining fixed proportions of all surplus profits. In this way it is hoped the production will be increased—the great desideratum—and that thereby coal prices will come down.

Matters have been so arranged that the incentive to increased production is powerful. In the early days of July preparations were active in many branches of industry for resuming work at full pressure. It is reported that there is an accumulation of orders in the hands of manufacturers, and as soon as coal is plentiful, and it is hoped cheaper, the way will be open for development.

A sign of the times in this connection is that the employees in numerous important industries, including the engineering trades, are agreeing with the employers to accept material reductions in wages, the impelling force being the gradual fall in the cost of living. Wages were raised because of the increase of the cost of living; now they are to fall correspondingly.

The tide of swelling wages in the British tramway industry has at last reached its maximum and is now about to fall. The recent Court of Inquiry set up by the Ministry of Labor, it may be recalled, recommended that present wages should be stabilized till Dec. 31 next. In view of the reduction then beginning in the cost of living, the employers refused to accept the recommendation. A committee of Joint Industrial Council for the indus-

try considered the position and on June 10 submitted recommendations to the council, and the latter body, with only one dissident, adopted them.

The effect of the changes thus brought about is as follows: The present rate of wages will be maintained until the beginning of the first full-pay period in August, 1921. From that date reductions from and additions to wages will be at the rate of one shilling per week for each complete five points variation either way in the cost of living index figure (as published monthly in the *Labor Gazette*) commencing from the figure of 135 per cent over the August, 1914, cost of living. Thereafter, wages will be adjusted by this method every three months, the adjustment to be determined by the index figure for the month preceding. In the case of employees under eighteen years of age, the reduction or addition will be at the rate of 6 per cent per week for each five points variation.

The arrangement will be terminable by three months' notice from either side after Dec. 31 next. It will be seen that this scheme is in principle the sliding scale which has been in operation in a good many British industries for some time. For the last few months the index figure has been steadily, though not very rapidly, falling, and it is not probable that it will rise materially again.

In June more examples arose of the conversion of boilers in English tramway power stations for burning oil instead of coal. In this way various tramway services which had been cut down owing to the coal miners' strike have been brought back to something like normal. A notable case of recent conversion is that in the Greenwich station of the London County Council Tramways. Four Babcock & Wilcox boilers, each of 4,780 sq.ft. heating surface, have been changed over. Almost every day in the latter part of June announcements were issued by the steam railway companies of restoration of trains which had been withdrawn, this being rendered possible by the conversion of locomotives to oil burning. The day of the absolute monopoly of coal as a source of power in this country seems to be over. The only thing that can restore it to its old position is a great fall in its price and that seems unlikely soon.

The policy of increasing the fares on Glasgow Corporation Tramways has turned out a great success. The effect of abolishing the half-penny fare and slightly increasing other fares has been made fully manifest in the accounts now issued for the year ended May 31 last. During that period the revenue amounted to £2,392,853. This is an increase of £671,276 over the previous year. The total expenditure was £1,937,664, an increase of £379,503. The net revenue, including interest on investments, is £470,430, compared with £176,762. After setting aside £267,687 for renewal of track and depreciation, and charging rent of leased lines, interest, sinking fund, and income tax, there remains a net credit balance of £105,796.

For the previous year, after making the corresponding allowances, there was a deficiency of £108,531. It should be mentioned that the interest and sinking fund charges are very small as the capital expenditure on the undertaking had been cleared off in previous years. It is proposed to use the surplus to wipe off nearly the whole of the previous years' loss. Apparently the tramways have turned the corner.

The accounts of the London County Council Tramways for the year ended March 31 last are in strong and unhappy contrast to those of Glasgow. The deficit is largely due to the heavy capital charges, while in the case of Glasgow there are, as noted above, practically no capital charges. It was made known some little time ago that the London undertaking had a deficit of over £500,000 for the past financial year, and the details now available fully bears this out.

The total revenue was £4,904,427, being an increase (largely due to increased fares) of £608,581 compared with the previous year. The working expenses, however, increased in greater proportion, the total being £4,623,654, an advance of £942,745. The surplus on working was accordingly £280,773, compared with £614,937. From the latter sum in previous year nothing was deducted for expenditure on renewals, but after allowing for interest, sinking fund, income tax, etc., there was a deficit of £100,722. On the present occasion there is deducted for renewals from the surplus on working a sum of £215,639, leaving £65,134. The net charges against this sum (interest, redemption, income tax, etc.) amount to £655,714, so that the deficit is £590,580. By far the greater part of this is due to the capital charges. For the year now current it is estimated that the deficiency will be only £7,417, the expected improvement being mainly due to increased receipts.

Manchester Corporation Tramways accounts show a balance after meeting all charges, of £124,428, and most of this is set aside for renewals. For the first time for many years no part of the surplus has been handed over for relief of the local rates. The gross surplus was £305,834, compared with £379,632 in the previous year.



# News of the Electric Railways

FINANCIAL AND CORPORATE :: TRAFFIC AND TRANSPORTATION  
PERSONAL MENTION

## Norfolk Debates Franchise

**A. Merritt Taylor Says Service-at-Cost Is Not What It Pretends to Be —Incentive to Profit Lacking**

The city of Norfolk, Va., is in the throes of a pre-election discussion of the franchise ordinance which has been proposed by A. Merritt Taylor, acting as a consultant for the city. Readers of the *ELECTRIC RAILWAY JOURNAL* will recall a series of articles last December which analyzed this rather interesting situation in Norfolk and reviewed Mr. Taylor's previous report on franchise bases, valuation, service requirements, and fares (see issues of Dec. 4, 1920, page 1125, Dec. 11, 1920, page 1186, and Dec. 25, 1920, page 1289). Since that time the actual franchise has been drawn up in line with the basis originally outlined. Among its provisions there are some which have been the cause for considerable debate between various groups in Norfolk. On July 24, Mr. Taylor discussed the franchise and answered his principal critics.

### FRANCHISE PROVISIONS REVIEWED

Some of the high points of the franchise which have caused this discussion are as follows:

A provision for a base valuation of \$8,750,000, which lies between a Jan. 1, 1920, price of \$11,815,399 and a Jan. 1, 1914, price of \$6,368,671. This value includes \$250,000 "going value," but this is to be raised to 15 per cent of \$8,500,000 when the company's service is restored to first class condition. The company is to be allowed 8 per cent cumulative return on this rate base if it can earn it. All deficits in any year are to be added to the present rate base until amortized; in addition the company is to be allowed to earn the annual cost of capital invested subsequent to Jan. 1, 1920, plus a margin of profit of not less than 2 per cent.

A provision that trackless vehicles are to be installed on certain routes.

A provision that the "Grantee shall use and efficiently maintain the most approved fixtures and appliances in general use to prevent injury by electrolysis or otherwise to the water pipes and other public improvements of the Grantor," and shall pay for damages due to failure to comply with this provision.

A provision that the franchise shall run for thirty years; that the city will purchase from the Grantee its entire system at its then value at the end of the franchise term, except that if the city shall issue another franchise with practically the same provision, it shall not be compelled to buy. This particular arrangement is necessary to meet provisions of the Virginia constitution, which limits franchise terms to thirty years.

A provision for a local commission, which is to be advisory to the City Council and the city manager.

A provision that the rate of fare shall be on the flat rate basis, starting at 7 cents, with free transfers. But that this rate may be changed by the Council on its own motion, or at the request of the railway. But the railway shall always be accorded a hearing before a rate change and shall have the right after the ordinance has been in force a year to raise the rates if necessary to provide the returns specified.

Mr. Taylor's report discusses and defends these provisions and others and ends with a warning against municipal ownership and service-at-cost, in which he says:

I hold no brief for suggestions which have been made tending toward municipal

operation of your street railway system or municipal regulation of wages of street railway employees, and do not consider them subjects worthy of serious consideration in an enlightened community. I want to warn you that "service-at-cost" is a mythical expression. As business men, you surely recognize that any enterprise to be healthy must perform service not at cost, but at a reasonable profit.

By critical investigation you will find that so-called service-at-cost contracts have either been brought about by unjust coercive methods pursued by cities, or contain an item of profit as an element of cost and are thus not what they pretend to be.

## Roads Centering at Indianapolis Cut Wages

Wage reductions of 3 cents an hour for motormen and conductors of the Indianapolis (Ind.) Street Railway, the Terre Haute, Indianapolis & Eastern Traction Company, the Interstate Public Service Company and the Union Traction Company of Indiana became effective on Aug. 1 with notices posted by these companies. Power house, shop and trackmen of some of the interurban companies were cut similar amounts.

It was said in notices posted by the Indianapolis Street Railway that the reduction was made necessary by a decrease of 44,000 revenue passengers daily caused by the continuance of unrestricted jitney bus competition and the present serious industrial depression. The interurban companies said they were compelled to reduce wages because business has fallen off.

The wages under the new scales of both the city and the interurban companies are far above pre-war scales.

The reduction made to platform men will not make up for the deficit caused by the falling off of business, estimated at more than \$500,000. The platform men of the company formerly received 40 to 45 cents an hour, depending on the length of service, and interurban platform men from 42 to 47 cents an hour.

## Interurban Reduces Wages

Wages were reduced on Aug. 1 by the Union Traction Company, Anderson, Ind. The announcement was made on July 28. The new scale in cents per hour for trainmen operating city cars is as follows:

First year	30
Second year	31
Third year	32
Fourth year	33
Fifth year	34
After fifth year	35

Operators of one-man cars will receive 2 cents per hour over this scale.

The new scale of the interurban men is as follows:

First year	39
Second year	40
Third year	41
Fourth year	42
Fifth year	43
After fifth year	44

This is a flat reduction for both classes of service of 3 cents an hour.

## New Franchise Grant Presented at Fresno

The first draft of the proposed indeterminate franchise which the Fresno (Cal.) Traction Company is asking of the city of Fresno has been placed in the hands of city officials by the company. The offering of the franchise grant by the company follows negotiations with the city opened some months ago and is supposed to cover both the points desired by the city as well as those asked by the company.

After the franchise draft has been submitted to the city attorney for inspection, it will be considered by the commission as a whole. The company holds a number of franchises on different lines of the city for various terms from twenty-five to fifty years. These franchises expire at different times. The first grant to run out will expire in seven years. In the business sections generally the franchises still have about nineteen years to run.

The position of the company is that with these franchises running for what are called short terms the company cannot borrow the money needed for street work, extensions and improvements. With the indeterminate franchise the officials claim they will have no difficulty in securing whatever money is needed. Under the proposed grant service would be rendered at cost, a stabilizing fund of \$25,000 being set up as the fare barometer.

## Concessions and Compromise Fix Award

The finding of the board of arbitration in the matter of wages on the Rochester & Syracuse Railroad, Syracuse, N. Y., was referred to in the *ELECTRIC RAILWAY JOURNAL*, issue of July 30, 1921. In detail the wages are as follows:

Motormen and conductors for the first six months of service have been reduced from 56½ cents an hour existing prior to May 1, 1921, to 46½ cents an hour. For the second six months of service the rate has been reduced from 58½ cents, existing prior to May 1, to 48½ cents an hour. Shopmen involved in the arbitration (except the nine car-cleaners and one watchman employed in the shops) were reduced 16⅔ per cent below the wages received prior to May 1.

This same ruling applies to substation operators, electrical repairmen, freight trainmen, ticket and freight agents.

Louis L. Waters, the neutral member of the board, declared in a statement that the amount of reduction was reached only by concession and compromise. That the financial showing of the company was not good, the arbi-

trators agreed. Still, Mr. Waters said the proposed 23.5 per cent reduction of the company and the 11.7 per cent reduction as seeming justified to the men did not seem a just award.

### Building Program Submitted by Company at Fort Wayne

In a letter addressed to the board of public works of Fort Wayne, Ind., the president of the Indiana Service Corporation, Robert M. Feustel, outlined the building program of the corporation for the next five or six years, showing extensive improvement requirements which will have to be made to meet the many transportation problems of the city during the period outlined. Among the things which Mr. Feustel's letter says must be done within this period are the following:

Abandon the line on Pontiac Street from Hanna Street to Anthony Boulevard in favor of a double-track line from Calhoun to Hanna Street, then out Hanna to McKee Street and from there to Wayne Trace.

Open Oxford Street in the southwestern section of the city to take care of the greatly increased population in that section. This would be entirely new trackage.

Double track Creighton Avenue from Calhoun to Fairfield Avenue. This to be done as soon as business becomes normal.

Extend a line into the Bloomingdale section of the city. This would involve the widening of Third Street from Franklin Avenue to Runion Avenue sufficiently to enable the company to lay double tracks on this street. Mr. Feustel recommends that the absolute minimum width of this street between curb lines be 34 ft.

Double track West Main Street from the new West Main Street bridge to the Lake Erie Railroad tracks, a distance of approximately 1 mile.

Extend the Columbia Street line across the new bridge over Delta Lake to Anthony Boulevard. This line should also be double tracked.

In his letter Mr. Feustel says:

While there is a considerable lull in our traffic at the present time which will require some curtailing of city service for the next few months this has nothing to do with what should be our possible long-time construction requirements covering a period of five or six years. In these difficult times it is of course necessary for us to conserve all construction funds and this outline of our future work is made only because we do not believe that payment should be placed or work should be done in these dull times in such a way that it will make it difficult or impossible to make the necessary transportation extensions in the future. We expect to make application for the suggested change of the Pontiac line at once and will follow with necessary petitions on the other locations as fast as the traffic requirements demand.

### Covington Employees Accept Cut

Employees of the South Covington & Cincinnati Traction Company, Covington, Ky., at a special meeting voted to accept a reduction of approximately 10 per cent in their wages. When the proposition was first presented to the men they voted it down and the selection of an arbitration committee was in progress when the employees reversed their decision. The new wage scale became effective on Aug. 3. Under the new scale the motormen and conductors will receive a maximum wage of 50 cents an hour.

**Railway to Build Park.**—The Philadelphia (Pa.) Rapid Transit Company is planning to build an amusement park on W. Market Street on the old Burd Home property. The company believes this project will beautify the section.

## Accident to Mule

### Texas Court Describes Principles of Mule Valuation, When Struck by Car—Mule Owner's Responsibility

The Northern Texas Traction Company now knows how much it costs to injure a mule. So does Mr. Stone, the owner of the mule. The question of mule valuation was the subject of extended litigation recently in Fort Worth, the case finally coming before the Court of Civil Appeals in Texas where a decision was given on May 26. The facts leading up to the litigation, as set forth by Judge Fry in his deciding opinion and repeated here in somewhat abbreviated form, follow:

This is a suit for \$229, damages to a mule alleged to have been inflicted by plaintiff in error negligently running a street car against the mule, which with three others was tied to the rear end of a wagon, and being led along the streets of Fort Worth. The cause was submitted to a jury on special issues, and on the answers thereto judgment was rendered in favor of defendants in error for \$201.

The jury found that the street car was running at a greater rate of speed than 18 miles an hour, and that this fact was the proximate cause of the injury to the mule, and that the mule was of the market value of \$220 in Fort Worth, just before the accident, and \$100 in West, after it had been hurt and treated for its injury. It was also found that Stone expended \$10 for his board and lodging in Fort Worth in order to treat and care for the mule, that medicine for the mule cost \$2.50, and there was a charge of \$25 for caring for the mule after it was sent back to West, and \$8.40 for freight on the mule back to West. It required twenty-two questions to elicit this highly interesting instructive information about the manner in which the mule was hurt and the time spent and tender care lavished on the animal to nurse it back to health and efficiency. Not more than six questions would have been sufficient.

If the mule was injured through the negligence of plaintiff in error, the measure of damages was the difference between its market value in Fort Worth before the injury and the market value thereafter. If, however, there was no market value for the mule in Fort Worth, as Stone testified, after it was injured and he took the mule back to West and by care and attention restored the animal to such an extent that he sold it for \$100, and that was the reasonable value, then the measure of damages would be the difference between the market value of the mule in Fort Worth before it was hurt and the reasonable value of the mule after it had been restored to partial usefulness, less the necessary and reasonable amounts expended in such restoration. While it is true that the measure of damages would not be the difference in market value of the mule before injured in Fort Worth and the market value after it was restored to some efficiency at West, still such rule would not injure plaintiff in error, because the evidence showed that the mule was worth more in West than it would have brought in Fort Worth. If defendant in error was acting properly in trying to minimize the damages by caring for the mule, he should be reimbursed for all reasonable sums expended in such care and attention, and that can be done by deducting these sums from the value of the mule after such care and attention.

The evidence, however, fails to show that defendant in error was acting reasonably; for, while he swears the mule was not worth a dime in Fort Worth after he was hurt, the uncontroverted evidence shows that defendant in error was offered \$35 in cash for the injured mule in Fort Worth at the time of the accident, but he refused it and chose to take the risk of restoring it to its usefulness. In treating and taking care of the mule he expended more than four-fifths of his value after being restored and left only \$19 to be credited to plaintiff in error on the original value. Defendant in error should pay for his mistake in endeavoring to cure the mule, and plaintiff in error, if liable at all, should have the benefit of the offer of \$35, which would have reduced the damages to \$185 instead of \$201.

The next question considered was the issue submitted by the trial court of

whether the motorman should not have given "such assistance to the plaintiff as was reasonably demanded by the circumstances to obtain clearance and avoid an accident." But the appellate court naturally declares that the hypothesis upon which this charge is based is not clear. On this point the opinion says, in part:

How the motorman, driving a street car, could give assistance to the owner of the lively young mule tied with three others to the rear end of a wagon is certainly not disclosed by any evidence and is not based on any law, statute or otherwise. If the court meant that the motorman should have stopped his car, if he saw the mule on the track, until it could be persuaded or forced to walk in a safer place, he ought to have said so. That part of the charge had no reference to the facts and could have no other tendency except to mislead the jury. It is followed by language that might lead the jury to believe that the street car ought to have steered around this unnatural animal "without pride of ancestry or hope of posterity," as an automobile would do; for that is what is meant by giving "such assistance \* \* \* as the circumstances shall reasonably demand in order to obtain clearance and avoid accident."

The learned judge then considers whether the mule injured, or its owner, was guilty of contributory negligence, as well as whether the motorman could have avoided the accident by other means. On this point he says:

There was evidence tending to show that the mule was three or four feet from the track when the front of the car passed, and, as stated by one of the witnesses, the mules "were kind of gay." The evidence presents a picture of a countryman from the McLennan County village of West, coming into the stirring modern city of Fort Worth, with two mules drawing his wagon and four untutored country mules attached by ropes to the rear end of his wagon. To these denizens of the field and meadow, honking automobiles, clanging street cars, and the turmoil of modern commercial life were not only novel, but alarming, as they steered their perilous journey through the city, with their nerves keyed to a high pitch, until at last they reached a modern convenience called an aqueduct. But unknown to them, and while wending their perilous way through this labyrinthine passage, before they were aware of its approach, a huge vehicle flits by, as on the wings of the wind, and what more natural than that the nearest mule to this unknown vehicle should seek instantly to defend itself against what was deemed to be an attack upon its personal liberty, by using the effective weapons placed in its possession by nature? The jury found that the gay and festive mule did not kick the car, which they probably might do under the testimony, although no one acquainted with the total depravity and moral obliquity of the average mule would hesitate to credit the statement that the mule now under investigation administered a swift kick to the car as it was passing its ever-ready heels. There was direct testimony to this effect.

In conclusion the judge remanded the case for retrial, believing that the jury should have considered whether the plaintiff was not so much to blame for the injury as to absolve the railway company.

### Ford Hasn't Forgotten Gasoline Trolley

In an interview appearing recently in the daily press, Edsel Ford, who is now president of the Ford Motor Company, is quoted as follows: "Father hasn't given up the gasoline 'trolley' car. It has been dormant for some time, but recently we ran one down the Detroit, Toledo and Ironton Railroad to Springfield. We believe it will solve many traction problems."

### Arbitration Award Accepted

Announcement has been made by officials of the Northern Ohio Traction & Light Company, Akron, Ohio, that the company's railway employees have agreed to abide by the wage award of the arbitration board. This board recently returned a finding fixing the rates of pay of the men from 1 to 2 cents per hour less than had been suggested by the company in its original proposal for a reduction in wages.

The opinion apparently prevailed among the men that the arbitrators to whom the wage matter was referred had been swayed in their decision by the offer made by the company originally to the men, for they asked A. C. Blinn, vice-president and general manager of the company, to set aside the arbitration findings.

This Mr. Blinn refused to do. He dismissed the contention that the wages awarded on his property were not comparable with wages paid on other properties, and said that "we must assume that neither the wage offered by the company nor the wage requested by the men had anything to do with the board's judgment as to what was a reasonable wage under all the circumstances."

He said, in conclusion, that to grant the request of the men to disregard the findings "would make a complete farce of the arbitration proceedings."

The details of the award were given in the *ELECTRIC RAILWAY JOURNAL* for July 9, page 68.

### Reduced Wages—One-Man Car Operation

Although union employees of the New Brunswick Power Company, St. John, N. B., have been on strike for several weeks the cars are operating and it is expected that the company will emerge from the struggle with a compact, efficient and loyal organization.

The labor controversy dates back to June 14 on which date the company's agreement with the union expired. The company gave the usual thirty days' notice that it did not intend to renew the agreement. Numerous consultations and meetings were held in an effort to institute a working agreement.

The company desired to reduce wages from 10 to 20 per cent. The men applied for a conciliation board which under the law must be considered before any lockout or strike can take place. The company declined to become a party to the board so the three members were appointed by the Minister of Labor. A verdict was brought in that wages should be reduced 5½ per cent, the one-man car should not be used, all employees should be taken back under the old agreement and that the loyalty stipulation should be ignored.

As a result of this decision the company notified its employees that commencing on June 28 a new scale would be instituted with deductions of 10 to 20 per cent in various departments and that the men would be treated on an individual basis. The former employees

did not return, but the company got enough help to operate the cars to a limited though growing extent. The new scale runs from a 10 per cent to a 27 per cent reduction and one-man cars have supplanted the two-man car operation.

### British Columbia Company Seeks New Franchise

The British Columbia Electric Railway is negotiating a new franchise for the company on the mainland. In a nutshell, the franchise is a form of service-at-cost agreement, covering city and interurban railway, light, power and gas service. It provides for a maximum return of 6 per cent on the company's actual invested capital, as will be ascertained by a firm of auditors, but new capital may obtain a return of not more than 8 per cent.

At the same time the company is not allowed to charge more than its present fares and rates, with the exception that its car fares can go up to 7 cents cash or four tickets for 25 cents. The company has still its present remedies for inadequate fares on the interurban lines. It will be permitted to charge a 50-cent minimum monthly on gas bills.

The service-at-cost arrangement provides that forthwith and every three years hereafter, the books of the company are to be investigated by the firm of Price, Waterhouse & Company, accountants, and rates are to be fixed so as to pay no more than the rates of returns as stated above. If adjustments have to be made as between various rates, a board of arbitration is provided.

In order to avoid any inefficiency in operation which is apt to result from a straight service-at-cost franchise, the draft agreement provides that any balance over the stated rates of return is to be divided, one half going to the company as a reward for efficiency and the other half to remain on the books untouched to provide for decrease in rates in the next three-year period.

The franchise is indeterminate, in a similar manner as the present franchises. At the end of twelve years a conference may be called to vary the terms.

The company surrenders to the city or the government or any combination of civic and municipal authorities the right to buy, not only as regards the railway service, which was solely within their rights of purchase previously, but as regards the light and power and gas systems. They can also buy these separately, but they cannot buy everything but the railway and leave the company with that.

The franchise does not guarantee the company any return on investment. If the revenue is not sufficient for any reason, it is the company's loss.

In Vancouver and the municipalities the franchises are for a definite term, but at the end of that time, the company must either be bought out or the franchises automatically continue for another term.

### Montreal Working Toward Compromise

The wage situation between the Montreal (Que.) Tramways and its employees remained unsettled on Aug. 2, though negotiations were still continuing, with a prospect of amicable agreement. Following the visit to the city of Gideon Robertson, Federal Minister of Labor, and his conferences with both parties, the company offered to substitute a wage reduction of 12½ per cent for its previous proposal of a 20 per cent reduction on the prevailing scale, but without a contract for any specified period.

This proposal was discussed at a joint meeting of representatives of the company and the men's union, held on Aug. 1, at which a member of the Department of Labor staff represented the Minister.

The union representatives contended for a 10 per cent reduction only, with a contract, but the company stood firmly by its amended offer.

The meeting broke up with the understanding that another would be held before the end of the week, when the company is expected to state its final decision. Whatever the outcome may be of the present exchange of opinions, the matter will be submitted by the men's committee to a referendum vote of the union, the alternative issues being acceptance of the company's offer or insistence upon the appointment of a board of arbitration to decide the dispute.

### Gradual Rehabilitation in Salt Lake City

With a view to improving its property, and at the same time to enhance the appearance of the city streets, the Utah Light & Traction Company, Salt Lake City, Utah, has enlarged its force of workers and will spend \$20,000 a month for the next several months in carrying out this work.

While heretofore there have been six gangs, consisting of forty-two men each, employed by the company in repairing the tracks and general improvements, twelve gangs, consisting of 126 men, are now employed, the object being to complete the work as soon as possible.

The enlarging of the force has been facilitated by a saving of \$125,000 to the company as a result of the recent decision of the arbitration board, which stipulated certain reductions in the pay of employees. This money will be devoted exclusively to the above repair work.

It is believed that the company, in spending this amount will meet the wishes of the city, which has asked that improvements be made in the tracks and in paving.

The fares which have prevailed heretofore have failed to furnish sufficient revenue for the company to undertake any big program, but with the program now outlined it is thought that within two years the property will be thoroughly rehabilitated.

### San Francisco May Vote to Purchase Market Street Railway

The city of San Francisco began early in June an appraisal of properties of the Market Street Railway with the idea of putting the question of purchase definitely up to the voters of the city at the November elections. As the matter stands now, the procedure will be for the Board of Supervisors to decide, after the valuation, upon what they believe to be a fair price. If the voters indicate their willingness to pay that price there will then have to be settled the question of whether the company will accept the price and terms offered.

### Wages Again Reduced by International Railway

The basic maximum wage for trainmen of the International Railway, Buffalo, N. Y., will be reduced on Aug. 15 from 60 cents an hour to 55 cents an hour, with similar adjustments in the hourly rates paid other employees.

The company, desiring to put off the longest time possible any general reduction in wages, made certain adjustments as of May 1, 1921, and at that time stated that a continuance of the 60-cent basic wage was dependent upon an improvement in the revenue of the company. In announcing the wage cut the company said:

Wages since May 1, 1921, have been very generally decreased elsewhere on street railways, and indications are that there will be further reductions in the future.

Street car riding on the International system has been falling off at an alarming rate. The figures for May, June, July, 1921, as compared with 1920 are as follows:

	Total Passengers—		Decrease 1921—	
	Carried 1921	1920	Under 1920	Passengers Per Cent
May...	18,158,661	19,194,767	1,036,106	5 40
June...	17,529,883	19,007,069	1,477,186	7 77
July...	17,375,454	19,994,294	2,618,840	13 10

For the six months ended June 30, 1921, the company fell short by \$916,683 of earning a fair return upon the value of its property devoted to the public service according to the formula adopted by the Public Service Commission when granting the 7-cent fare—four tickets for 25 cents.

This great falling off in business must be met with a cut in operating costs.

In addition to other economies there must be a substantial reduction in the payroll in order that the company's receipts may meet its expenses.

### Fund Raised for Paving Obligations

A plan to avert an impending crisis between the city of Cape Girardeau, Mo., and the street railway over an ultimatum delivered by the city in the matter of the paving of West Broadway is believed to have been devised. The City Commission ordered the Cape Girardeau-Jackson Interurban Railway to remove its tracks on that part of West Broadway for which paving contracts had been let, but the company has refused to act. E. A. Hart, general manager of the Cape Girardeau-Jackson Interurban Railway, has suggested that the city and civic organizations provide a fund of \$8,200 to defray the expense of taking up the track and relaying it and for the purchase of four new cars. In return the company will

agree to perform the work of removal and relaying the track and pay incidental expenses and will place the new cars in operation at once and will keep the system in satisfactory condition for five years.

### City Loses Suits to Recover

Supreme Court Justice Irving Lehman has denied the application of the city of New York to recover upward of \$125,000 from the Interborough Rapid Transit Company because "bonuses, presents or honoraria" received by executives were charged against the city as part of the construction cost of subways under construction in 1913. In a similar action he decides that the city is not entitled to recover \$1,990,800 from the New York Municipal Railways Corporation, the subway operating subsidiary of the Brooklyn Rapid Transit.

Justice Lehman points out that the agreement provided a time limit of thirty days in which protests against the decisions of Alfred Craven, the then chief engineer, were to be made.

### No Trolleys in Des Moines

Electric railway service in Des Moines, Ia., was suspended on Aug. 4, following a federal court ruling. Other carriers of all descriptions were rushed into service on Aug. 4 to provide transportation. The court had previously indicated that the shutdown would result unless some solution was found for the difficulties between the city and the Des Moines City Railway over jitney competition and other matters.

The immediate cause of the withdrawal of the trolleys was the inability of the company to operate successfully in the face of bus competition. Judge Wade said that the property could not be operated longer without prejudice to the bondholders.

H. Gadsden, president of the American Electric Railway Association, says that the suspension of the railway under orders of the federal court was due primarily to lack of adequate relief in the way of higher fares and "lawless competition" from jitney buses.

The troubles of the company at Des Moines were reviewed at length in the ELECTRIC RAILWAY JOURNAL for June 11. Developments since then were followed in the issue of July 23, page 144.

### Supplementary Bus Service Planned

The fare receipts of the Tulsa (Okla.) Street Railway on the East First Street division alone recently have been \$200 a day less than they were a few months ago, due to jitney competition. It was erroneously stated in the ELECTRIC RAILWAY JOURNAL, issue of July 23, that the loss in receipts was \$200 a month. The company contemplates the use of motor buses as a temporary experiment where it feels branch lines ought to be built and in order to develop the territory to the point where the permanent extensions are justified.



**Franchise Surrendered for Indeterminate Permit.**—The Terre Haute, Indianapolis & Eastern Traction Company, which operates the local system in Richmond, Ind., has notified the City Council there that it would surrender its franchise with the city of Richmond and operate in the future under the indeterminate permit issued by the Public Service Commission. A similar notice was filed with the county auditor of Wayne County at Richmond covering the operation of the interurban line from Richmond west to the Henry County line.

**Railroad Appeals Bridge Case.**—The Brooklyn (N. Y.) City Railroad has appealed to the Appellate Division from a decision of Supreme Court Justice Kelby appointing three commissioners to determine whether the city's plan to run cars across the Williamsburg Bridge is proper. The commissioners have reported favorably on the scheme. The company holds that the city has no franchise and no certificate of necessity for running cars on the bridge, and therefore it would be illegal. The corporation counsel's office contends that the city may operate across the bridge as a matter of right.

**Norwood Approves Franchise.**—The Norwood (Ohio) City Council unanimously passed the amended franchise ordinance recently submitted by the Cincinnati Ohio Traction Company, and which provides for the reduction in fares on August 1. The ordinance as passed is similar to that which was passed by Cincinnati City Council on June 14. The ordinance is to be effective whenever the Cincinnati ordinance under which fares are to be reduced becomes effective. The ordinance provides that the City of Norwood waive claim to the franchise tax, amounting to \$6,000, until 1922.

**Prizes Offered for Suggestions.**—Prizes of \$15, \$10 and \$5 were recently awarded E. C. Hunsucker of the Charlotte street railway, R. T. Marlow and H. R. Johnson of the Winston-Salem railway property for the most valuable and timely suggestions affecting the street railway service of the Southern Public Utilities Company at its several branches. The first prize-winner emphasized courtesy and patience on the part of the employees. The second winner discussed the need for the establishment of a training school for new men and those who have been in the service less than two years and the last winner suggested that the first and main thing for a successful motorman was to learn to maintain schedules. The letters were published in the July issue of the Southern Public Utilities magazine.

# Financial and Corporate

## Utilities in Greater Favor

In its monthly survey of business conditions issued on July 25 the Guaranty Trust Company, New York, comments on the improved condition in the bond market and refers particularly in this connection to public utility issues. On this matter it says, in part:

The market for public utility issues, particularly those of well-managed and conservatively financed power and light companies, has reflected the improved position of public service corporations. Gross earnings are showing an improvement, and, with the decline in labor and other operating costs, an even greater improvement is being shown in net earnings. Average earnings of 14 representative companies, as reported for April, 1921, showed gross earnings 16 per cent greater than for April, 1920. The corresponding increase in net earnings was about 24 per cent. With the growth of population in general and the increasing concentration in industrial centers that the last census indicated, the opportunity for expansion of public utility enterprises is such as to make probable increased development in this field.

## I. C. C. Allows Two California Short Lines to Quit

So far as known the first railroad to get the official count placing it in the down-and-out class from motor truck competition went out on June 21 when the Interstate Commerce Commission counted ten over two branch lines of the Ocean Shore Railroad in California. One line runs from San Francisco to Tunitas Glen in San Mateo County and the other runs from Santa Cruz to Swanton in Santa Cruz County. The official knockout of the railroad by the motor truck is contained in this decision of the Interstate Commerce Commission:

Construction of the lines in question was begun in 1905 and completed in 1909, with some interruptions due to financial difficulties. The completed property was acquired by the applicant in 1911 in reorganization proceedings following a receivership. Gross revenues have never equalled operating expenses and a deficit amount to \$407,848 at the close of the year 1920 has been met by assessments on the outstanding stock aggregating \$29 a share. Traffic diminished progressively, chiefly because of increasing competition by motor vehicles. The territory served is devoted principally to agriculture and lumbering. No objection to the granting of the application has been filed with us. The record is clear that but little use has been made of the service in the past and that there is little, if any, prospect that the lines can be made to serve any useful purposes in the future. We, therefore, find that the present and future public convenience and necessity permit the abandonment of the lines.

## Receiver Resigns at Montgomery

Ray Rushton has resigned as receiver for the Montgomery Light & Traction Company, Montgomery, Ala., and S. B. Ireland, already holding the position of receiver for the Montgomery Light & Water Power Company, has been appointed by Judge Henry D. Clayton to succeed him.

Accompanying his resignation, Mr. Rushton submitted to the court a report in which he refers to the unsuccessful effort to secure the application of the service-at-cost plan, with a 10-cent fare to start, to the railway sys-

tem. Regret is expressed by the retiring receiver at the opposition shown by the city commission of Montgomery to the plan and the failure of the Public Service Commission to apply it. He is of the opinion that the traction company cannot perform its functions and duties until some more reasonable plan is adopted than that now in force.

In the course of his remarks Mr. Rushton said:

Your receiver has now served the court and the property for a period of two years and a half. During that time under the instructions of the court, everything has been done that was possible to rehabilitate the property and put it in a condition to meet its obligations to the public and its creditors, in the hope that the time would come when the owners would get some return from their investment.

The Alabama Public Service Commission seems to be of the opinion that the public will be better satisfied with an inferior service and a lower rate. To this I cannot agree. It is true that there are some few citizens of Montgomery who probably approve of such a plan, but from an intimate contact with the patrons of the company, it is the opinion of your receiver that a large majority want good service and are willing to pay for its reasonable cost, but of such facts I have been unable to convince the commissioners.

## Fewer Passengers at Increased Fares

Effects of the increased fares on Glasgow Tramways are plainly visible in the following figures: During the financial year ended May 31 the traffic revenue of £2,388,444 showed an increase over that of the previous year of £671,953. On the other hand, the number of passengers, 447,601,811, showed a decrease of 61,738,075. The traffic revenue per car mile increased by 5.737d. (to 21.307d.) while the passengers carried per car mile decreased by 2.612 (to 16.638).

## Kansas City Road Making Progress Under Receivership

The steady progress of the Kansas City (Mo.) Railways under the receivership has been the subject of comment by Kansas City business men. The company is giving perhaps the best service in recent years, and despite the depression alleged to exist in business generally, is showing an increase in passengers carried over last year.

It is of interest that fully 85 per cent of the passengers are using tokens with which to pay fare—about 70 per cent paying with the metal tokens costing 15 cents for two, and 15 per cent using the tickets at 7 cents in lots of five or multiples thereof. While nominally a 7-cent fare prevails, the public does not take advantage of that privilege, but on the average pays more than 7½ cents.

The apparent satisfactory character of the progress being made is reflected in the absence of court proceedings often accompanying the operation of a receivership. It is inferred that the

bondholders and the stockholders are equally content with the developments, and observe a unity of interest in the continuance of the present steps in the handling of the company.

## Another Drastic Financial Reorganization

Key Route Plans to Cut Capital from \$48,219,000 to \$30,245,000 Including \$1,500,000 of New Money

The financial structure of the successor company to the San Francisco-Oakland Terminal Railways will differ materially from that of the present company if the reorganization which is now planned is carried out unchanged. Moreover, the capitalization will be scaled many millions, for it is proposed to exchange \$48,219,000 of the present securities for \$28,245,000 of new securities.

The plan eliminates entirely the now outstanding \$15,125,000 of common stock of the present company and places the stock control of the operating company with the holders of the prior preferred and preferred stock who formerly were the holders of bonds. Holders of present preferred stock to the extent of \$13,050,000 will receive in exchange \$6,525,000 of new common stock, or one share of common for two shares of preferred.

The proposed plan complies with the principles of reorganization approved by the Railroad Commission. As long ago as Aug. 11, 1919, that body indicated to the railway that the only permanent remedy for the financial difficulties of the company was a thorough-going reorganization. That the plan now advanced is such is indicated by the fact that whereas the total value of the property is \$37,232,000, including \$1,500,000 for betterments, there will be outstanding only \$30,245,000 of stocks and bonds of the successor company. In this valuation no amount has been included to represent going concern, franchise or other tangible items.

The object has been to limit the prior preferred stock to an amount on which dividends may reasonably be expected to be earned from the beginning. On the basis of 1920 earnings, the amount available for interest and dividends of the reorganized company would be as follows:

Gross earnings.....	\$6,829,970
Net before depreciation, but after operating expenses and taxes..	\$1,579,218
Bond interest.....	\$612,331
Note interest.....	216,000
Prior preferred dividend.....	393,277
	<hr/>
	\$1,211,608
Balance.....	1,221,608
	<hr/>
	\$357,610

The plan contemplates paying in cash all coupons on outstanding bonds maturing prior to Nov. 19, 1919, and funding all coupons due from that date up to the time of the distribution of the new securities. The unpaid coupons, it is estimated, total \$1,676,820. Of the new first mortgage issue, the first series of \$2,500,000 is to be initially issued and sold, and of this the owners of the new common stock are to buy \$1,000,000.

### Municipal Consent Necessary to Abandonment

The Board of Public Utility Commissioners of New Jersey has granted permission to the Bridgeton & Millville Traction Company to discontinue service and remove the tracks on the private right-of-way upon the line from the crossing of the Central Railroad on the Bridgeton turnpike in Tumbling Dam Park, Bridgeton. Providing the city assents, the company will also be permitted to remove the section of these tracks on the public highway. Authority to remove about 10 miles of track running between Newport, Port Norris and Bivalve has been denied by the commission. The commission stated in its opinion that the company did not consult any of the municipalities affected.

Abandonment of this section of the line, the commission pointed out, would eliminate the only electric railway communication between Bivalve, Port Norris, Dividing Creek and Newport, and also part of the line connecting Bridgeton and these points. Permission to abandon this section of the line, representing about 26 per cent of the revenue tracks of the company, was sought on the ground that its operation is not profitable. Some evidence of municipal consent must be presented, the decision of the commission stated, before such authority will be given.

### Little Rock Property To Be Appraised

The City Council of Little Rock, Ark., recently authorized C. E. Smith, St. Louis, to be retained to appraise the property of the Little Rock Railway & Electric Company in order to check up the company's recent report of its holdings and to determine if the company is entitled to an increase in fares from 6 cents to 7 cents.

The Council on July 7 refused permission to the company to collect a 7-cent fare. The company then filed suit in the Second Division Circuit to restrain the city from prohibiting the

collection of the advanced rate. It also asked for a temporary restraining order which would prevent interference during the pending of the suit.

The work of starting the valuation depends upon the action of Judge Guy Fulk in fixing the date of hearing the petition of the company for the order to prevent the city authorities from interfering with the proposed increase in fares. The city authorities want the work to begin as soon as possible, so that the city can perfect its defense against the proposed increase in railway rates.

### Traffic Ratios Computed

Tabulation Shows Results from 154 Companies Made by American Electric Railway Association

The Bureau of Information and Statistics of the American Electric Railway Association has made public the results of a recent study on traffic statistics of 154 electric railway companies. These figures are given in the accompanying table. Further explanation made by the Bureau in regard to some of the figures follows:

Certain of the companies in the city groups also do some interurban service, but it is impossible to segregate the statistics. Where there are two or more companies in a city, the figures from all were used to determine the average revenue passenger ride per inhabitant. Where this was not possible, the figure was rejected. The averages on rides per inhabitant are omitted from the interurban group because the tributary population could not be determined. As methods of counting passengers on interurban lines vary, the figures on numbers of passengers on these roads are not comparable. The table is made up from a table of statistics obtained from 154 individual roads, and the figures given as averages in the respective groups are the arithmetical averages of the figures for the roads in that group taken individually, and not the weighted average for each group taken as a whole.

### Earnings Shrink in Cleveland

The Cleveland (Ohio) Railway in June carried 4,759,616 fewer riders than it did in the same month a year ago. This is a loss of 12.59 per cent and is the most serious decrease in traffic sustained by the company since the present business depression. In June, 1921, the company carried 33,047,581 riders as against 37,807,197 in June of 1920.

As a result of this big falling off in the number of riders, the company for June showed a deficit of \$44,953. The company's passenger revenue in June was \$1,417,120, a decrease of 2.37 per cent over June, 1920, when the rate of fare was only a nickel cash or five tickets for a quarter as against the present 6-cent fare or nine tickets for 50 cents.

The company's interest fund, which is the fare barometer, showed a deficit of 67,006 on July 1. The company's maintenance, depreciation, and renewal reserve account shows a current over-expenditure up to the present time of close to \$500,000.

Because the company is unable to secure new capital, owing to the city's refusal to increase the company's dividend rate from 6 per cent to 7 per cent, and the company's inability to sell its present 6 per cent stock at par, the directors have authorized the officers of the company to take the funds for all expenditures for new work, that should come from new capital, out of the maintenance allowance until such a time as conditions made it possible to attract new capital.

### Negotiations Under Way to Strengthen Property

Interest due on May 1 on the \$3,979,000 of outstanding first mortgage 5's of 1937 and the quarterly interest due on June 1 on the outstanding \$650,000 of 7 per cent notes of the South Carolina Light, Power & Railways Company, Spartanburg, S. C., have been defaulted. The company passed into receivers' hands last February. It is believed that arrangements will be carried through that will obviate the need for foreclosure and sale of the property.

The present plan is to have the people of Spartanburg vote on an increase in gas and electric light rates and the power consumers will be asked to enter into contracts for the rates as allowed by the court. An effort will also be made to obtain an increase in railway fares.

### An \$8,000 Increase in Income

The June report of the Public Service Railway, Newark, N. J., shows an increase in the net income of \$8,901 over June, 1920. The net for June, 1921, was \$13,016. In the matter of traffic the railway carried 37,292,708 passengers, of whom 30,246,530 were revenue passengers and the others transfer passengers paying 1 cent each.

The revenue from both these classes

AVERAGE SERVICE RATIOS OF CITY AND INTERURBAN COMPANIES GROUPED ACCORDING TO NUMBER OF CARS OPERATED

RATIOS	City Companies Operating				Interurban Companies Operating			
	I 1 to 50 Cars	II 50 to 250 Cars	III 250 to 1,000 Cars	IV 1,001 or More Cars	I 1 to 10 Cars	II 10 to 25 Cars	III 25 to 75 Cars	IV 76 or More Cars
Average number of properties analyzed.....	23	31	14	7	13	16	13	8
Revenue passenger rides per inhabitant per year.....	133	288	317	369	.....	.....	.....	.....
Index*.....	100	216	238	278	.....	.....	.....	.....
Revenue passengers per car-mile.....	5.25	6.21	6.76	6.75	2.02	2.47	3.51	4.53
Index.....	100	118	129	129	100	122	174	224
Revenue passengers per mile of single track.....	205,900	263,500	464,000	515,000	31,170	36,400	74,000	147,100
Index.....	100	128	226	251	100	117	117	473
Car-miles per mile of single track.....	36,650	42,100	69,900	73,900	13,940	15,670	18,170	28,750
Index.....	100	115	191	202	100	112	112	206
Passenger revenue per revenue passenger, cents.....	0.0658	0.066	0.063	0.0705	0.224	0.242	0.154	0.092
Index.....	100	100	95.7	107	100	108	68.4	41.1
Car-miles per passenger car.....	44,900	46,850	43,100	39,500	58,700	79,700	63,400	56,170
Index.....	100	104	96.0	87.9	100	136	108	95.7
Revenue passengers to total passengers carried [per cent].....	92.35	86.45	80.8	79.5	96.6	95.3	93.1	89.97
Index.....	100	93.7	87.5	86.1	100	98.7	96.4	93.1
Car-miles per car-hour.....	8.55	8.94	8.88	9.05	13.26	13.89	11.43	11.19
Index.....	100	105	104	106	100	105	86.4	84.5

\*This index is obtained by assuming the value of the ratios in Group I as 100 and calculating the proportional deviation of the other groups.

of passengers amounted to \$2,162,948. However, the revenue would have been increased by \$68,000, it is estimated, if the new rate for transfers, namely, 2 cents, had been in effect. This is assuming that the increased transfer charge would not have decreased the number of transfer passengers.

The average fare per revenue passenger including transfer passenger was \$0.07151 during June and the revenue per car-mile was 45.4851 cents.

## Financial News Notes

**Stock Dividend at Detroit.**—The Detroit (Mich.) United Railway has declared a dividend of 2½ per cent, payable in stock on Sept. 1 to stock of record of Aug. 16. This is a stock dividend similar to that declared three months ago.

**Eureka Bonds to be Offered.**—The city of Eureka, Cal., which recently took over the property of the Humboldt Transit Company has been authorized by the citizens to float a bond issue of \$130,000. The property was valued at \$75,000 and the remaining \$55,000 will be used for extensions and betterments.

**Receipts Decline in East St. Louis.**—The receipts per day of the East St. Louis & Suburban Railway, East St. Louis, Ill., passenger department declined since January from \$3,490 to \$2,740, or a falling off of 21 per cent. The East St. Louis Railway shows a similar decline since January from \$3,150 to \$2,450, or 22 per cent.

**Belgian Company Extends Its Activities.**—The Compagnie Générale de Chemins de Fer Secondaires of Brussels, has changed its name to Compagnie Belge de Chemins de Fer et d'Entreprises. The company proposes to operate as a contractor and as promoter of light railways in countries both in and outside of Belgium.

**No Bidder for Georgia Property.**—Although it was announced some time ago by Judge B. D. Evans of the United States Court for the Southern District of Georgia that the City & Suburban Railway, Brunswick, Ga., would be sold as a going concern to the highest bidder, no bid for the property was received at the sale on July 5. The line will probably be sold as junk.

**Municipal Railway Increases Gross.**—Municipal railway earnings at Tacoma, Wash., during the month of June were \$8,576, as against \$8,096 for May, \$8,492 for April and \$8,273 for March. There was an average of 7,258 passengers carried during week days, as against an average of 7,124 for May, indicating a slight resumption in the tideflats industries which feed the municipal line.

**\$992,000 of Notes Approved.**—Permission to the Cincinnati (Ohio) Traction Company to use the proceeds from a bond issue of \$992,000 of 7 per cent notes for improvement, if the notes are purchased by the Cincinnati Street Railway, has been granted by the Ohio Public Utilities Commission. It is expected that the notes will be issued at once, as the traction company has been awaiting the decision of the state commission to act.

**Objection to Separate Foreclosure.**—The Guaranty Trust Company, New York, N. Y., has filed a bill in the United States District Court taking exception to the decision of Judge Orr, in which he rules that the Southern Traction Company, one of the three underlying companies of the Pittsburgh Railways may foreclose on the mortgage and operate its West End lines independently. It is contended that any such action might delay the proposed reorganization plan.

**Would Extend Notes at Increased Rates.**—The Interborough Rapid Transit Company, New York, N. Y., has applied to the Transit Commission for permission to extend the date of the maturity of \$39,416,000 of its notes for one year from Sept. 1 next, and to increase the interest rate from 7 to 8 per cent. It was explained that the condition of the money market would make it difficult to obtain an extension of time at the present interest rate, and that the inability of the company to meet the notes made an extension imperative.

**Request to Issue Notes and Bonds.**—The Indiana Railways & Light Company, Kokomo, has filed a petition with the Public Service Commission of Indiana asking for authority to issue and sell \$250,000 of its first collateral gold notes and to issue \$424,000 of its first refunding mortgage bonds for the reimbursement of its treasury and for permission to use the bonds as collateral security. According to the petition the money is required to reimburse the treasury for expenditures made for the improvement of the company's properties.

**\$573,169 Increase in Tube Balance.**—The Hudson & Manhattan Railroad, operating under the Hudson River between New York City and New Jersey, reports for 1920 gross operating revenues of \$9,016,253, against \$7,978,910 in 1919, and a balance after interest and reserve for contingencies of \$596,730, compared with \$23,561 in the previous year. After deducting full interest on adjustment, income 5 per cent bonds in 1920 there was a deficit of \$1,058,370. The net income from railroad operations for the year was equal to 3.55 per cent on the outstanding debt allocated to railroad operations.

**Payment Announced on Income Bonds.**—The directors of the Hudson & Manhattan Railroad, New York, N. Y., have declared an interest payment of 2½ per cent on the company's \$33,102,000 of 5 per cent adjustment income bonds, payable on Oct. 1, 1921,

out of the surplus income for the six months ended June 30, 1921. This is the second installment of interest to be paid on these bonds since Oct. 1, 1916, the first installment of 2 per cent having been paid on April 1, 1921. As the interest on these bonds is cumulative after Jan. 1, 1920, a balance of 3 per cent of cumulative interest remains unpaid.

**Service Must Be Resumed.**—The Board of Public Utility Commissioners has ordered the Jersey Central Traction Company, Keysport, N. J., to resume operation of its cars on Carr Avenue, Keansburg, Monmouth County. The traction company submitted an application to the board providing for the removal of their tracks on Carr Street, claiming that the cars were operated only during the summer months and that even then the traffic was very light. The Utility Board held that the continuance of the Carr Avenue line was necessary in order that adequate and proper service be provided.

**\$12,800 Earned in Salt Lake City.**—The Utah Light & Traction Company, Salt Lake City, Utah, earned a balance after depreciation of \$12,800 for the year ended Dec. 31, 1920, compared with \$29,355 for the previous year. Gross earnings were \$2,069,482, and net earnings \$580,199. Other income was \$401,748. After paying interest on bonds and making other deductions the balance was \$157,525. Against this sum \$144,725 was set aside for depreciation. The total number of passengers carried in 1920 was 40,512,223, compared with 39,521,505 for the previous year. The number of car miles in 1920 was 5,316,917, and in 1919 5,303,783.

**Commonwealth Company Prospects Improve.**—George E. Hardy, president of the Commonwealth Power, Railway & Light Company, Grand Rapids, Mich., says, with some improvement in market and financial conditions and taking into consideration the company's present earnings position, it should be possible in the near future to formulate a plan looking toward the liquidation of the floating and other short-time indebtedness. The company reports net income for June, available for dividends, replacements and depreciation, of \$164,386 against \$8,398 in June, 1920. The account for the six months totals \$1,524,532, compared with \$1,207,941.

**Suit Brought Over Rentals.**—The Ninth Avenue Railroad, New York, N. Y., has brought action against the Forty-Second Street, Manhattanville & St. Nicholas Avenue Railway and the Third Avenue Railway in the Supreme Court. The plaintiff alleges that annual rentals for the use of the track on Broadway between Sixty-first and Seventy-first Streets, which were to continue for an indefinite period, stopped on Dec. 1, 1919, and obligations amounting to \$42,000 have since accrued. The agreement involved was made on Dec. 1, 1897, between the defendant and the Metropolitan Street Railway.

# Traffic and Transportation

## New Fares in Winnipeg

Long Litigation Over Commission's Jurisdiction Settled Amicably—Other Matters Being Negotiated

Negotiations between the Winnipeg (Man.) Electric Railway and the City Council of Winnipeg, which have been in progress for some months past have consummated in the passing by the City Council of an agreement with the railway which puts an end to the fare controversy and all litigation connected therewith, stabilizes relations between the company and the civic authorities, and augurs well for harmony and continued co-operation between the company and the city in the future.

As reported in the *ELECTRIC RAILWAY JOURNAL* previously the Public Utilities Commission of Manitoba granted the company, on three different occasions, higher fares. Exception was taken by the City Council to the final order, which was made Aug. 20, 1920, giving the company a 7-cent cash fare, four tickets for 25 cents, seven children's tickets for 25 cents and abolishing cheap workmen's fares. Holding that the Public Utilities Commission had no jurisdiction to alter fares which were stipulated in the original franchise, the City Council went to the Appeal Court of Manitoba to have the order set aside. A unanimous decision of the Appeal Court given April 4 last, upheld the commission's order, ruling that the commission had such jurisdiction. The City Council therefrom decided to carry its case to the Privy Council in London, England. In the meantime, however, the Council appointed a special sub-committee to try to effect a settlement.

As a result of conferences attended by A. W. McLimont, vice-president and general manager of the railway, the counsel for the company and members of the sub-committee, an agreement was drawn up between the company and the sub-committee, which agreement was ratified by the City Council and came into effect on Aug. 1. This agreement restores the by-law which incorporated the franchise as being "in full force and effect except as to fares" and placing the by-law and all agreements and dealings between the city and the company beyond the jurisdiction of the Public Utilities Commission. Under this agreement the Council agrees to a revised rate of fares (now in effect) and provision is made for an annual revision of fares by arbitration, if necessary, the arbitrators to decide a just and reasonable fare, having regard among other things to the value of the property.

The revised rate of fares which went into effect on Aug. 1 maintains the

7-cent cash fare, with four tickets for 25 cents, provides for a 5-cent cash fare on Sundays, nine tickets for 50 cents on week days between the hours of 6 to 8 a.m. and 5 to 6:30 p.m., while school children's tickets are eight for 25 cents as against seven for 25 cents which previously obtained for school children.

Negotiations between the company and the city will be continued with a view to settling all matters regarding which the city and the company are at present at variance.

## Low Fare Test Fails

Experiment in Cleveland With 2½-Cent Fare Will Undoubtedly Be Discontinued

The experiment of the Cleveland (Ohio) Railway in trying to stimulate riding by reducing the rate of fare in a limited zone in the down town section of Cleveland has not been a success. That was the announcement made by John J. Stanley, president of the company, to his board of directors at the meeting on July 28.

The experiment of charging 3 cents cash or a 2½-cent ticket rate of fare in the down town part of the city in a prescribed area was sanctioned by the City Council at the suggestion of Fielder Sanders, city street railway commissioner, for a thirty-day test, starting July 11. The new rates most likely will be discontinued at the end of the thirty days. Mr. Stanley said:

The result has been very disappointing because we believed that we might boost our revenues by getting the riding habit instilled into down town shoppers.

Here are the figures showing the number of riders who availed themselves of the 3-cent cash or 2½-cent ticket rate in the zone area during the first two weeks of the experiment:

Date	Ticket Riders	Cash Fares	Total
July 11.....	8,710	8,216	16,926
July 12.....	10,145	8,499	18,644
July 13.....	10,040	8,115	18,155
July 14.....	11,104	7,645	18,749
July 15.....	10,374	7,944	18,318
July 16.....	8,334	7,731	16,065
July 17.....	2,367	3,247	5,614
July 18.....	10,747	6,914	17,661
July 19.....	10,529	7,410	17,939
July 20.....	10,307	6,562	16,969
July 21.....	10,408	6,646	17,054
July 22.....	10,162	6,856	17,018
July 23.....	8,227	6,600	14,827
July 24.....	2,812	3,698	6,510
July 25.....	10,078	6,416	16,494

The city street railway commissioner had estimated that at least 20,000 riders would avail themselves of the low fare every day, but as the figures indicate, at no time did the total number even go as high as 19,000. This means that the company is actually losing money, because most of those who availed themselves of the low fare would probably have ridden at the regular fare of 6 cents, company officials say.

## Sioux City Favors Railway

Council Refuses to Issue Licenses—Jitneys Cease Operating—Court Sustained City

The City Council of Sioux City, Ia., has recently ruled that jitneys shall not operate in that city. The jitney operators have attempted to enjoin the City Council from arresting an operator who might run without a license. The court refused to grant such an injunction. Then the operators commenced action to compel the Council to grant licenses. A hearing was had in this matter and the court also refused to grant this relief.

The jitney problem in Sioux City dates back to the winter of 1920 when the General Assembly of the State provided that no jitneys could operate in an Iowa city without license and made it an indictable misdemeanor for them to do so. This act of the Legislature also provided that the City Council might accept or reject the application for such licenses.

Before the present action of the City Council, there were perhaps forty to fifty jitneys operating in Sioux City. The jitneys were making the short hauls and operating upon the streets which were already served by the street cars. The jitneys were taking perhaps \$100,000 to \$150,000 each year from the railway. The railway was charging a 6-cent fare, which had been voted by the people at a special election to amend the franchise. The original franchise provided for a 5-cent fare.

### COURT ALLOWED SEVEN-CENT FARE

With the increase of freight rates and the increased cost of labor, this jitney competition made it entirely impossible for the railway property to meet operating expenses. No dividends had been paid since 1918. It was necessary, then, for the company to eliminate the jitney, or obtain higher fares. Accordingly, action was instituted in the Federal Court of Sioux City to enjoin the City Council from enforcing the 6-cent provision of the franchise on the theory that, because of these conditions above enumerated, it had become confiscatory and therefore in violation of the Federal Constitution. The Federal Court granted a temporary writ of injunction and authorized the company to charge a 7-cent fare. The company operated under this for thirty days.

When the Chamber of Commerce appeared before the City Council and asked that body to refuse licenses to jitney operators in order that the railway might receive the money otherwise taken by the jitneys, and thus accomplish a final reduction of the railway fare, the Council refused to license jitney operators further, and arrested those operating without license. As a result no jitneys have been operated since that time.

The railway then entered into a stipulation with the City Council, defendants in the injunction proceeding,



to the effect that the court might decree in the said proceeding that the railway should sell four tickets for 25 cents, this order to be effective so long as jitneys were not running; a single fare to remain at 7 cents.

### Reduced Token Fare in Washington

In accordance with a recent ruling of the Public Utilities Commission of the District of Columbia a reduced rate of fare which will be applied uniformly to the several railways operating in the District of Columbia will become effective on Sept. 1. The cash fare will remain at 8 cents with a reduced token fare from 7½ cents to 7 cents. The present 1-cent charge for inter-company transfers and the existing free transfer privileges will continue.

The following properties are included in the ruling: Washington Railway & Electric Company, the City & Suburban Railway, the Georgetown & Tennallytown Railway, the Washington Interurban Railroad, the Capital Traction Company, the East Washington Heights Traction Railroad and the Washington - Virginia Railway. The ruling will continue in force until March 1, 1922, when, unless the commission rules otherwise, the initial rate of fare will be restored to that in effect on Oct. 18, 1919.

The commission in its findings stated that it was highly desirable in the public interest to maintain a uniform rate of fare to prevent a disarrangement of railway service disastrous to both the companies and the public. For this reason the commission believed that it could not reduce fares on the Capital Traction Company's lines and at the same time continue the present rates on the lines of the Washington Railway & Electric Company.

The commission stated further that it was its opinion that no appreciable relief from the present state of affairs, whereby one company receives less than a fair return and the other an excessive return, can be obtained unless some new ruling on taxation is formulated or until a merger is brought about.

### Connecticut Jitneys to Run Unmolested Temporarily

Unlicensed jitney operators in the State of Connecticut have until Aug. 16 to continue running buses unmolested. Judge Thomas of the United States District Court issued an injunction on July 30 which terminated the jitney ban temporarily and prevented the police authorities from making arrests. The ruling is the result of the claim on the part of the busmen's attorneys that the men's constitutional rights were being invaded.

Judge John E. Keeler of the Superior Court had previously refused to issue an injunction to prevent the police from interfering with the jitney men who had been refused licenses by the Public Utilities Commission and the men proceeded with their case through

the state circuit and the supreme court and also through the federal court.

The case will be heard at New Haven on Aug. 16 before a special court of the United States. Circuit Judge Wade Rogers will preside and with him will sit Judge Thomas of the Connecticut District Court and another district judge not yet selected. If the federal judges should decide in favor of the busmen the then prosecutions in the lower court will cease instantly. If, on the other hand, the case goes against the bus operators then criminal proceedings will be started at once.

In New Haven the jitneys will be operated on a 5-cent fare basis pending settlement. A session will be held in Bridgeport to discuss, among other things, the fare question.

### Increased Transfer Charge in Effect in New Jersey

New rates went into effect on Aug. 4 on the lines of the Public Service Railway in New Jersey in accordance with the order of the Board of Public Utility Commissioners rendered July 14. As indicated in the ELECTRIC RAILWAY JOURNAL for July 16, the board found and determined that the rate which had been charged by the company for transfers was insufficient and ordered the company to charge a fare of 7 cents where 7 cents had been charged and to charge 2 cents for a transfer where a charge of 1 cent had previously been in effect.

According to computations by the commission, the extra charge of 1 cent for a transfer will afford a yearly increase in receipts to the company of about \$715,000. It is also held that this increase, together with the reduction in cost of operation and wages and other adjustments in operating expenses, as found by the board, will produce a sufficient revenue to enable the company to meet all its requirements for operating expenses, taxes and depreciation and will afford a reasonable return upon the value of the property.

The commission estimates the number of passengers to be transported for the year beginning Aug. 1, 1921, as follows:

Base rate fares.....	361,130,000
School fares.....	5,300,000
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Total first fares.....	366,430,000
Transfer fares on 2-cent basis..	75,000,000
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Total of all fares.....	441,430,000

As has been indicated previously the board found the fair value of the property for rate-making purposes to be \$82,000,000, after considering all the evidence in the case relating to value, the historical cost, cost of reproduction new, accrued depreciation, appreciation, going value, contingencies, cash working capital, materials and supplies and all other elements of value, tangible and intangible.

The board considers a return of \$5,842,500 a fair return on the \$82,000,000 valuation, this return amounting to more than 7 per cent upon the valuation.

### Emergency Fare Hearing Continued

Hearing of the petition of the Minneapolis (Minn.) Street Railway before the State Railroad & Warehouse Commission for an emergency increase in its rate of fare from 6 cents to 7 cents and four tickets for a quarter was continued from July 26 to Aug. 23 after a half-day session. The matter was put over at the request of the representatives of the city government that they were not prepared to present their argument. A representative of organized labor made a verbal statement against the proposed increase. He was asked to file a brief along with the other parties to the hearing.

Horace Lowry, president of the railway, said that before the war the company earned from \$1,800,000. Earnings have, however, fallen off to about \$1,100,000 a year. He said that Minneapolis in 1918 valued the street railway property at \$24,000,000, and since then the value had increased \$1,000,000. The book value of the property is \$29,500,000. He said:

We pay taxes on a valuation of about \$23,000,000. On that investment a return of \$1,000,000 is only about 4 per cent. Present earnings at a 6-cent fare are inadequate. We have \$5,000,000 of bonds maturing next January on which we are paying 7 per cent interest. Unless we get money to pay the bonds an extension of the time they run will be necessary, and financial men tell us that extension will mean an addition of about 2 per cent interest. It is vitally necessary for the street railway to get on a financial basis to do refunding and provide money.

The commission denied the plea of City Attorney C. D. Gould for dismissal of the case on the ground the commission had no jurisdiction. This plea may be made later through the courts to test the law passed by the 1921 legislature putting trolley rate making under the jurisdiction of the commission.

The hearing on the appeal of the St. Paul City Railway for an emergency rate of 7 cents has also been put over until Aug. 23.

### Eight Cents in Cincinnati

Fares were reduced half a cent to 8 cents and the "pay-as-you-enter" system was re-established on lines of the Cincinnati (Ohio) Traction Company on Aug. 1. Reduction in fares was accomplished by an ordinance passed recently by the City Council modifying the company's franchise.

For the next three months the fare will be 8 cents for adults and 4 cents for children ten years and under. The return of the "pay-as-you-enter" system is due to trouble experienced through congestion at certain points under the "pay-as-you-leave" system.

Attempts on the part of the Citizens Committee to stay the reduction in fares until after the November election were foiled when the city appealed to the courts and got a decision to the effect that the ordinance was not subject to a referendum vote. A suit is pending in the Ohio Supreme Court relative to the matter. It will be heard within a few weeks.

### Utility Law Questioned

Wording of the Public Utilities Act of 1911 as amended by the 1921 Legislature was questioned before Chief Justice Gummere at Newark during the hearing of an application by the New Jersey & Pennsylvania Traction Company, Trenton, N. J., for a writ of certiorari enjoining the Public Utility Commission from suspending the ten-cent fare application of the company another three months.

The chief justice told L. Edward Herrmann, counsel for the board, that the language of the law was ambiguous and that the commission should seek to have the Legislature clarify it. The law, according to Herrmann, gives the commission the right to suspend a rate for six months. The company and the chief justice disagreed. The chief justice allowed the writ of certiorari, but refused to issue an order enjoining the commission's suspension, because Mr. Herrmann said the commission would be prepared to render a decision on the dime fare application by Aug. 10. The company operates between Trenton and Princeton.

### Reduced Fare Results Disappointing

City officials in Kalamazoo, Jackson, Battle Creek and Lansing, where 6-cent fares went into effect on July 1, see danger of a return to higher fares as a result of reports submitted by the Michigan Railway, the operating company, giving the total fares collected during the period of the new fare.

The report will show that during the second week of the trial total fares were smaller than in the corresponding week a year ago. Greater use of automobiles in spite of the business depression is considered the cause for the decline in the railway patronage.

At the time the reduced fare was granted the four cities by Manager J. F. Collins, it was intimated that the continuance of the reduction must be dependent upon an increase in fares collected and the corresponding increase in the company's revenue. The cities are determined to insist that the lower fare be continued until a thorough trial has been effected. Competition by jitneys is playing an important part in the discussions between city and company.

Lansing, where success was claimed by city officials for the first two weeks of the experimental reduction in fares, now has under consideration a project calling for the operation of motor buses as tributary to the electric lines, with transfer privileges from bus to bus and car to bus, or vice versa. This proposition has been put forward as one solution to the present jitney competition, for it will enable the railway to serve those parts of the city which are not now tapped by the car lines and thus defeat one of the chief sources of strength of the jitneys.

The reduction in fare is from 10 cents to 6 cents, with nine tickets for 50 cents. The cut in fares came after the city

officials had firmly demanded some reduction which was granted by General Manager Collins on June 30. In his letter granting the reduction Mr. Collins asked that the committee of the City Council having the matter within its jurisdiction investigate the affairs of the Michigan Railway, the operating company, and audit the books.

### Eight-Cent Fare Asked

Indianapolis Street Railway Sees in This Rate Its Only Hope—  
Suicide, Says City

The presentation by the Indianapolis Street Railway of a petition for an 8-cent fare with a 2-cent transfer, the assertion by Samuel Ashby, Corporation Counsel, that "Well, we're not going to have an 8-cent fare in this city if we have to turn the whole thing over to the jitney buses," and the presentation by company officials of a tale of financial woes based on a mass of statistics marked the conference on July 29 of members of the Public Service Commission, officials of the city and officers of the company on the street railway situation. The conference lasted about two hours.

After H. H. Hornbrook, attorney, had finished presenting the company's petition for an increase in fare, Mr. Ashby said:

It occurs to me that if the Indianapolis Street Railway was deliberately trying to ruin itself it couldn't have devised a better scheme than such a petition under such conditions as we have now. A fare such as that suggested would not have a tendency to help this situation. Why, it's almost suicidal. It would effect an increase in the jitney competition and ruin the company.

Then Mr. Ashby said there must be no such thing as an 8-cent fare.

Mr. Hornbrook replied that there was no alternative for the company other than to ask for a rate sufficient to support it. He said jitney competition was authorized by the city. Mr. Ashby said the Council had expressed the intention of curbing the competition. Ferdinand Winter, also counsel for the company, said that since last spring the City Council had been deliberating about what it should do, and that meanwhile the company had been losing \$1,000 a day.

The result of the conference was that the commission took the evidence presented to it under advisement and retired.

Joseph McGowan, treasurer of the company, was the only witness on the stand. He presented figures to prove that jitney competition is growing worse all the time. He testified that the June business was \$965.53 below the June, 1920, business and that the business for July, 1-17 was \$1,102 a day below that of July, 1920.

For the six months ended June 30 the company's earnings fell short by \$183,000 of providing a 7 per cent return on \$15,000,000.

The commission merely continued the order that now is in effect, giving the company a 5-cent fare, with a 2-cent charge for transfers.

### New Ohio Bus Law in Effect Aug. 15

Motor vehicles transporting passengers for hire between municipalities in Ohio will be subject to regulation as public utilities beginning Aug. 15, on which date the Graham bill passed by the recent Legislature, becomes effective.

Their classification as a public utility will require all such lines to file with the Ohio Public Utilities Commission, schedules of rates which may not be increased except after thirty days' notice by publication and makes them in all respects subject to the same control as is exercised by the commission over other public utilities.

Hundreds of such lines are in operation in the State, using both motor buses and touring cars, most of them operating in competition with interurban and steam railroads, but heretofore without any regulation whatsoever.

The utilities commission has prepared a notice of the new law, together with suggested forms for filing schedules, which are being mailed out to individuals and companies conducting motor transportation lines wherever the commission learns of such lines being in operation.

The law will not affect motor truck freight and express lines operating on highways, nor motor passenger lines operating within municipalities.

### Court Upholds Seattle's Right to Regulate Jitneys

The State Supreme Court at Olympia, Wash., on July 20 sustained the right of the city of Seattle to regulate jitney traffic on its streets. The decision was rendered in the rejection of an appeal of H. P. McGlothorn against dismissal of an injunction action brought against the city to restrain enforcement of the regulation ordinance under which 187 applications for jitney operation had been refused.

In the King County Court, Judge Walter M. French had dismissed a temporary injunction granted the jitney operators pending final decision. The Supreme Court holds that this controversy questions the city's power to control its streets, a power of which there can be no doubt under a rule well established in this State and generally. The city is held to have had the authority and to have been engaged in proper exercise of it at the time injunction suit was brought.

The decision of the Supreme Court makes valid the jitney ordinance passed by the City Council in June a year ago. The decision, according to Corporation Counsel Walter F. Meier's office, gives the city the right to place the jitneys under restriction, to require all jitney drivers to obtain licenses and to keep the jitneys off certain streets served by the Seattle Municipal Railway.

At the time the ordinance was passed, the jitney-drivers obtained a temporary restraining order that has been in effect for a year.

## Personal Mention

### Power Engineers Together

Messrs. Murray and Flood Combine Forces as Consultants on Heavy Traction and Other Subjects

William S. Murray, formerly chairman of the Super-Power Survey, and Henry Flood, Jr., formerly engineer-secretary of the Super-Power Survey, have formed the firm of Murray & Flood, Grand Central Terminal, New York, for the purpose of carrying on a consulting engineering practice. The work to be undertaken will comprise general power engineering, public utility interconnections, power plant engineering, both steam and hydro-electric, heavy traction railroads and industrial electrification.

Mr. Murray was for many years the chief electrical engineer of the New York, New Haven & Hartford Railroad. His connection with the road began in April, 1905, when he secured the position of electrical engineer, later becoming consulting engineer with the road to undertake the electrification of the New York division. The electrification of the railroad with the single-phase system was completed in 1915 at a cost of \$25,000,000. During the latter part of the time when he was acting as consulting engineer he was a member of the firm of McHenry & Murray, which was formed in 1913.

#### MR. MURRAY A LEHIGH GRADUATE

In 1917 Mr. Murray became president of the Hoosatic Power Company, which owned water power sites of that portion of the Hoosatic River within the State of Connecticut. He was also chief engineer of the Connecticut Power Company, which purchased the company owning these power sites. This latter company has recently completed the hydro-electric station on the Hoosatic known as the Stevenson plant, which is one installation of a chain of developments which, when completed, will make Connecticut's contribution to conservation the saving of 500,000 tons of coal annually.

Mr. Murray was graduated from Lehigh University in 1895 with the degree of electrical engineer. Upon graduation he went with the Westinghouse Electric & Manufacturing Company, and during the following seven years successively passed through its manufacturing, testing and construction departments. With the last-named department he was associated with the first high-tension plant installation in the State of Maine.

Mr. Flood likewise has had previous consulting engineering practice in New York City. His most recent work consists of an association with Dr. John Price Jackson in conducting the power survey for interconnecting the electric utilities companies of western Penn-

sylvania, eastern Ohio, and northern West Virginia, and in acting as engineer-secretary of the Super-Power Survey.

Mr. Flood received his technical education at Cornell University. He was for a number of years associated with the electric utility industry, starting with the Newburgh Light, Heat & Power Company as assistant to the manager of the electrical department. Later he was associated with the Grand Central Light & Power Company as power engineer and from there went to the Central Hudson Gas & Electric Company as chief engineer, where he remained for seven years. Following this he was mechanical engineer for the American Smelting & Refining Company. It was this company he left to take up work as a consulting engineer.

### Mr. McKinley Attends Inter-parliamentary Union

William B. McKinley, Senator from Illinois and president of the Illinois Traction Company, Peoria, has sailed again on a foreign mission. He left New York on Aug. 4 on the *George Washington* for Stockholm to attend the nineteenth conference of the Inter-parliamentary union, composed of members of the national legislative bodies of more than twenty governments in Europe, Asia and America. The forthcoming meeting will be the first since 1914.

Mr. McKinley has long been a deep student of economic and political questions and has made himself an authority on matters involving foreign relations. This is the more unusual because all the time he has been deeply concerned with the management of his banking interests, to say nothing of the calls made on his time for advice and help in the administration of the Illinois Traction System, probably the most extensive combined city and interurban railway system and lighting property in the country. Several years ago, Mr. McKinley, accompanied by a party of friends went on a trip around the world, spending considerable time in the principal foreign cities.

Robert B. Rifenberick, formerly consulting engineer of the Detroit (Mich.) United Railway, has been appointed valuation engineer of the United Railways & Electric Company, Baltimore, Md. Mr. Rifenberick was connected with the Detroit United Railway from 1909 until the early part of the present year. Before that he was consulting engineer of the Cleveland Electric Railway and previous to that he was engineer in charge of construction on the Cleveland & Eastern Railway. He was long in the services of the steam

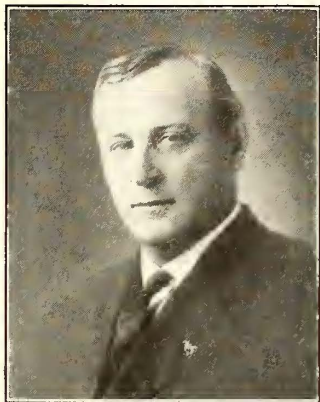
railroads. He was graduated from the Miami University Scientific Training School in 1885.

H. H. Buckman, master mechanic of the Interstate Public Service Company, Indianapolis, Ind., has tendered his resignation effective Sept. 1, 1921. After severing his present connection, he will represent the United Lead Company in the Middle West, with headquarters at Indianapolis. Mr. Buckman has been with the Interstate organization for seventeen years, and his energy and thorough knowledge of his department have materially assisted in bringing the traction system of the company to its present high state of efficiency. Mr. Buckman's successor has not yet been appointed.

Captain George F. Daggett has been appointed secretary to George McAneny, chairman of the Transit Commission. Captain Daggett became chief clerk of the old Public Service Commission soon after it was organized in 1907. Nine years later he was appointed assistant secretary. He joined the war forces in 1917, was commissioned as captain and attached to the Army Intelligence Department in Washington. After the armistice he returned to the commission as chief of the Transit Bureau. He resigned in 1920. The Transit Commission is seeking to bring back to the service men whose ability has been proved.

Louis T. Klauder recently resigned from the Philadelphia Rapid Transit Company as construction engineer to enter the consulting engineering field. Mr. Klauder was graduated from the Williamson School in 1901 and from the Drexel Institute in mechanical and electrical engineering in 1908. He entered the engineering department of the Pennsylvania Iron Works in 1901, later resigning to become associated with the Philadelphia Rapid Transit Company in 1905. With the latter company he occupied in turn positions of draftsman, chief draftsman, assistant engineer and construction engineer in charge of plant design and construction. From the last-named position he has just retired in order to devote his entire time to consulting work.

C. A. Baxter has been appointed superintendent of transportation of Chicago & Oak Park Elevated Railways, Chicago, to succeed H. G. Harding, who resigned to become general superintendent, Chicago & Interurban Traction Company. Mr. Baxter has been trainmaster of the Oak Park "L" since 1912. He began work in the electric railway field as a train clerk on the Metropolitan West Side Elevated Railroad, Chicago, in 1895. A year later he became a motorman on the same road, continuing until he was made trainmaster of the Oak Park line in 1912. His early experience in the railroad field began when he was fifteen years old as a telegraph operator and station agent on the Springfield-Sandusky (Ohio) branch of what is now the Big Four Railroad, and later on the Burlington Railroad, in Nebraska and Kansas.



J. G. HUNTOON

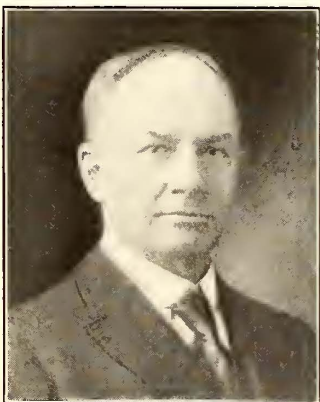
## Management Localized

Greater Individual Responsibility to Cities Will Hereafter Devolve on Tri-City Officials

The Tri-City Railway, Davenport, Iowa, has undergone a sweeping reorganization of its personnel to the extent that it will divide the detailed management of the railway in Iowa and Illinois, localizing the interests in an endeavor to get into closer personal touch with the various communities. This is the first step in a general reorganization of the system and a general realignment of the present personnel.

J. G. Huntoon, general manager of the Tri-City Railway since 1908, and now a vice-president of the company, retired from the active capacity of manager on Aug. 1. T. C. Roderick, present assistant general manager, has become general manager of the Tri-City Railway of Illinois. R. J. Smith, formerly superintendent of overhead construction, has become general manager of the Tri-City Railway of Iowa, and Clark G. Anderson, assistant general manager of the interurban lines, has become general manager. E. L. Fischer, general manager of the Muscatine Lighting Company, becomes general manager of the Muscatine railway lines. These promotions and changes were referred to briefly in the *ELECTRIC RAILWAY JOURNAL* for July 23.

This reorganization means the local-



T. C. RODERICK

izing of lines in Illinois, Davenport, Muscatine and the interurban lines under existing heads, in order that greater efficiency may be obtained in the way of relieving the main office of much detail. Each line will be placed under a separate head and all books will be kept in the respective offices for that line.

Mr. Huntoon has desired for some time to relinquish his duties, but his resignation was refused by President B. J. Denman, because Mr. Huntoon's services were considered necessary to the successful working out of certain matters. The change that has now been brought about is merely the consummation of a long effort on the part of the general manager to be relieved of detail work, in order to be free to put into effect broad principles advanced by him for establishing closer personal touch with the three cities.

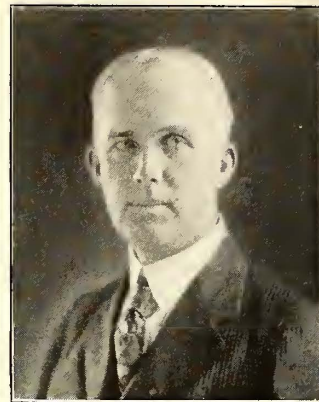
Mr. Huntoon is by no means severing all connection with the line, for he will remain as vice-president of the company. He is a railway operator who has come through all phases of



R. J. SMITH

the work to general manager. In recording Mr. Huntoon's life history, one Davenport newspaper says that thirty-three years ago he set out one morning looking for a job. A gang was at work laying track for the Davenport & Rock Island Railway, the pioneer horse-car line of that city. John Huntoon was hired as a water boy, and he later became timekeeper, then cashier, and in 1895 succeeded Henry Schnitzer as superintendent. In 1908 Mr. Huntoon stepped up another rung when he became general manager and vice-president of the Tri-City Railway, succeeding James F. Lardner, who retired. He has held that position continuously since.

Mr. Roderick, the new general manager of the Rock Island and Moline line, is backed by twenty-five years' experience in traction operation. He went to the Tri-City in March, 1918, from Grand Rapids, Mich., where he was engineer of the Grand Rapids Railway for eleven years. Previous to that time he had been connected with the Citizens' Street Railway, Detroit, and with the Indianapolis Street Railway.



C. G. ANDERSON

R. J. Smith, who becomes the new general manager of the Davenport line, went to Davenport in 1911 as assistant construction engineer of the Clinton, Davenport & Muscatine Railway. At the completion of this interurban, Mr. Smith became engineer of way and structure for the Tri-City Railway and since the year 1918 he has acted in this capacity for all of the properties controlled by the United Light & Railway.

Mr. Anderson, the new general manager of the Clinton, Davenport & Muscatine Railway, had been assistant general of the property since 1914. For the four years prior to his connection with the railway he was the commissioner of public works of Moline, having been in the service of the city as city engineer from 1905 until 1910. Mr. Anderson was born in Moline, Ill., in 1873. While in the University of Illinois he specialized in civil engineering and was graduated with the class of 1898. During the succeeding seven years until he became city engineer of Moline, he was in a general engineering practice in Peoria, Ill.

Mr. Fischer, the new general manager of the Muscatine division of the company, retains his position as general manager of the Muscatine Lighting Company, to which he was appointed in 1918. Mr. Fischer is a young man who has risen rapidly to



E. L. FISCHER

the top. His first position, involving some real responsibility, was with the Fort Dodge Gas & Electric Company as electrical superintendent. Although he took this position in the fall of 1917 he was promoted to general superintendent of the same company in the spring of 1918. In August, 1918, he resigned to become general manager of the Muscatine Lighting Company.

Mr. Fischer entered the Iowa State College in 1908 and was graduated with the degree of Bachelor of Science in Electrical Engineering with the class of 1912. His first railway connection was with the Fort Dodge, Des Moines & Southern Railroad, whose employ he entered in April, 1912, as general storekeeper. In the fall of that year, however, he severed his connection with the railway in order that he might take up experimental work at the Iowa State College for a few months. In November, 1912, he entered the employ of the Fort Dodge Gas & Electric Company as a meter man and in two years he was advanced to superintendent of electrical distribution. Mr. Fischer received the degree of electrical engineer from Iowa State College.

## Obituary

### George W. Edwards

George W. Edwards, president of the Brooklyn (N. Y.) Rapid Transit Employees' Benefit Association, died on July 30 following an operation. In many respects Mr. Edwards was a very unusual man. He had a positive genius for handling men and it was for this reason that he was appointed by the company in charge of its welfare activities at the inception of that work. "Pop" Edwards was the sobriquet applied to Mr. Edwards by the men on the B. R. T. This title was well chosen for Mr. Edwards was in many ways a father to the thousands on the system. At his office at the main club house of the company in East New York the men came to Mr. Edwards for succor and advice on all sorts of questions and they found in him a most sympathetic counselor. He had come up from the ranks himself and had never lost the common touch and the men knew that what George Edwards told them he told them from deep convictions of his own.

Mr. Edwards started as a brakeman on the elevated lines in New York. He went to work for the elevated in Brooklyn as a train dispatcher when the first elevated railroad was opened there in 1885. Later he was made superintendent and then general superintendent of the Brooklyn elevated. In May, 1904, he was made secretary of the Employees' Benefit Association. Shortly afterward he was elected president of the association. When the pension department was organized in 1910 Mr. Edwards was made secretary and member of the board of pensions. In 1912 he was appointed welfare administrator of the entire property. Mr. Edwards was born in New York City sixty-six years ago.

# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE  
MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

## Buy Coal Now!

Letter From Secretary of Commerce  
Advises the Buying of Coal as  
Soon as Possible

The Secretary of Commerce made public on July 18 the text of a letter that he has addressed to all the public utility associations. The letter reads:

I would like to call the attention of your association to the bituminous coal outlook. There is every indication that there has been an undue slackness in the purchase of coal, which may accumulate to large demands in the autumn. I am convinced that, due to the general depression, the prices of bituminous coal at the mines are not too high at the present time. This, I think, is proved by the fact that numbers of operating coal companies are making no profit whatever. If there should be a recovery of business activities in the autumn, taken in conjunction with the large increase in percentage of disabled cars (from 5 per cent to 16 per cent during the past six months) and the inability of the railways to finance their maintenance, there are possibilities of development of a most serious situation as regards coal movement.

I cannot but feel that the Interstate Commerce Commission, in the face of warnings they have sent out in this connection would not be disposed to give any priority in such an event. It seems to me, therefore, to be obvious that the public utility companies, both in their own interests and in the protection of the public, should make early provision for stocks of coal sufficient to carry them over a critical period.

## Metal Market Unfavorable

The copper market situation is far from favorable. Prices are  $\frac{1}{4}$  cent lower than when last quoted. Pressure to sell by outside interests is held responsible for the weaker prices, but even large producers have lowered their quotations to 12.75 cents for August shipment. With small producers copper is available at 12.50 cents delivered for August and 12.25 for prompt shipment. Consumers have not reacted to these lower prices, however; in fact, as selling interests become more anxious to unload buyers hold off all the more. It is stated that as low a price as 12.12 $\frac{1}{2}$  cents per pound delivered has been made by second hands. Wire base has dropped  $\frac{1}{4}$  cent to 14 to 14.50 cents.

The Copper Export Association on Aug. 15 called in for redemption \$1,000,000 of its 8 per cent gold notes, series A, due Feb. 15, 1922. The securities to be redeemed represent about 10,000,000 lb. of copper.

The value of non-ferrous scrap metals recovered in 1920, according to the Geological Survey, amounted to \$188,507,260, or \$6,666,000 more than in 1919. Copper recovered in 1920, including that in alloys other than brass, had a value of \$48,060,800, compared with \$41,812,000 the preceding year. In the same period brass scrap remelted increased from \$75,944,100 in 1919 to \$77,454,000 last year.

The lead market is quiet with prices steady. Tin has dropped again and is

cheap at its present low price of 26 cents, but buying interest has not reacted as yet. Zinc is a shade firmer, and though sales are still quiet, producers are not pressing to sell.

## Insulator Market Active

Demand for High-Tension Insulators Is  
Falling Off, But Previous Orders  
Keep Manufacturers Busy

Production of high-tension insulators is still at full capacity throughout the industry, but as deliveries are being made faster than orders are received, it is a question just how long this will hold true. One of the large producers, for instance, has enough business on hand to keep going full time for two months, though it is admitted there is not a whole lot in sight after that time. Deliveries have been steadily improving and now range from about four to six weeks on suspension types and four to eight weeks on pin-type insulators, depending upon the voltage. No stock has yet been accumulated on the high-tension types, but on low and medium voltages there has been some accumulation. Very few orders are being received from electric railways, but there are quite a number from central power stations. These latter orders, however, are small in size.

## Lamp Production Still Low

Production of lamps has been showing a falling off during the last few months. From reports on factory operation it would seem that production now is on a basis of about 65 to 70 per cent of capacity, and when it comes time for the two weeks summer shut-down of those factories which expect to close it is probable this term will be extended a week or so.

Although factory lamp stocks are pretty large, there are a few signs that point to a possible reduction. There has been a noticeable pick-up in activity among the textile mills in New England, although the metal industries there and in general are still dull. The longest days of the year are a month and more behind us and the earlier evenings are already noticeable. From some quarters it is reported that lamp distributors have been cutting down on their lamp orders to a greater degree than their lamp sales have dropped off, indicating a reduction of their stocks. If this is so, their orders, it seems, should soon begin to increase in size. Of course, the lighting load on central stations shows a decrease throughout the summer months this year as well as in the past, and in addition the industrial depression has kept many lamps dark.

## Rolling Stock

**Elmira Water, Light & Railroad Company, Elmira, N. Y.**, has received the eight safety cars which were ordered some time ago from the Osgood-Bradley Car Company.

The **Columbus (Ga.) Railroad** has ordered four new cars for delivery about Oct. 1. These cars are of a similar type to those already in service.

**Pacific Electric Railway Company, Los Angeles, Cal.**, has recently purchased some additional Birney safety cars for extending its service. This company now has sixty-nine Birney safety cars in operation on its local lines.

The **New Orleans Railway & Light Company, New Orleans, La.**, has ordered 400 Nichols-Lintern mechanical sander equipments. These will be installed on cars already in service in order to comply with the laws recently passed by the Legislature of the State of Louisiana.

**Detroit (Mich.) Municipal Railway**, mentioned in the July 23 and other issues as purchasing 100 safety cars on July 12, has issued the following data on these cars.

Number of cars ordered.....	100
Date of order.....	July 12, 1921
Delivery.....	Approximately three months
Builder {	25 McGuire-Cummings Mfg. Co.
	50 St. Louis Car Company
	25 Osgood-Bradley Car Company
Type of Car.....	Safety
Seating capacity.....	32
Weight, total.....	16,000 lb.
Truck wheelbase.....	8 ft.
Interior trim.....	Cherry
Headlining.....	Agasote
Roof.....	Arch
Air brakes.....	Westinghouse DH16
Axles.....	4 in.
Bumpers.....	6 in Channel section
Car signal system.....	Faraday
Car trimmings.....	Statuary Bronze
Control.....	K 63
Curtain fixtures.....	Curtain Supply Company
Curtain material.....	O'Bannon 076
Designation signs.....	Keystone
Fare boxes.....	Johnson
Fenders or wheelguards.....	H.B.
Gears and pinions.....	Westinghouse Helical
Heater Equipment.....	Cutler-Hammer
Headlights.....	Golden Glow No. 96
Lightning arresters.....	Westinghouse
Motors.....	Westinghouse 508
Paint, Sherwin-Williams, Old Dutch Enamel	
Registers.....	International, R7 Air operated
Sanders.....	Osgood-Bradley traps
Sash fixtures.....	Howard & Edwards
Seats.....	Manufacturers' Standard
Seating material.....	Wood Slats
Step treads.....	Feralun
Trolley catchers or retrievers.....	Ohio Brass Company
Trolley base.....	Ohio Brass Company
Trolley wheels or shoes.....	Ideal 4 1/2 in.
Trucks.....	Manufacturers' Standard
Ventilators.....	Manufacturers' Standard
Wheels.....	Steel, 26 in.
Special devices, etc.....	Nichols-Lintern duplex tail lights
Center lighting.....	Electric Service Supplies Company
Fixtures and opal shade.....	

## Track and Roadway

**Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind.**, recently prevented the City Council from awarding a contract for the improvement of Seminary Street as had been contemplated owing to the surrender of its franchise under which it operates through Greencastle, Ind. The street will be re-advertised and the contract probably awarded in August. The traction company's line runs through the city over Seminary Street.

**Indiana Service Corporation, Fort Wayne, Ind.**, will not build the much-needed new line to the thickly populated northwest section of Fort Wayne owing to the fact that remonstrators have been successful in killing the proposed paving of the street over which the line was to run. It was the plan of the traction company to install the new line when the street was improved, and in a letter to the board of public works recently the company explained that it will be impossible to lay the proposed double track unless the street is widened. Now an effort is being made by the councilman from this particular section to get through a petition for the widening of the street. The proposed route is down Franklin Ave-

nue from the end of the Huffman car line to Third Street and thence west.

**Detroit (Mich.) United Railway** has notified the Pontiac City Planning Commission that rebuilding of trolley lines in that city, removing the third track from Saginaw Street and double tracking the northwestern division in that city is very doubtful. The expense would total about \$300,000. General Manager Burdick announces that adequate repairs are being considered.

**Seattle (Wash.) Municipal Street Railway**, has had the approval of the Council in its extension and betterment plan. Recently by a vote of five to four, the Council adopted a report adding the extension of the Beacon Hill car line at a cost of \$100,000 to the bill providing for the issuance of \$1,330,000 of railway utility bonds.

## Power Houses, Shops and Buildings

**Southern Pacific Company, Oakland, Cal.**, has prepared specifications for a new station and for rearrangement of tracks after learning that private plans for building a combination office building and station at Franklin and Fourteenth Streets could not be financed. The plans call for a building on Thirteenth Street midway in the block and for the removal of the small buildings now there.

**Portland Railway, Light & Power Company, Portland, Ore.**, has recently placed in operation in its East Lincoln Street station, the largest turbo-electric generator in this territory. The generator is a General Electric Curtis turbo type. The generator has a rated capacity of 12,500 kw. Wood waste will be used as fuel, but fuel oil can be used if necessary.

**Milwaukee Electric Railway & Light Company, Milwaukee, Wis.**, has bought the plant site of the Pelton Steel Company, Kinnickian Avenue, Milwaukee, for the extension of its carhouse and shops.

## Trade Notes

The **Shire Electrical Products Company, Marquette Building, Detroit**, has developed a "Startometer" for measuring storage battery output under load.

The **Whiting Corporation, Harvey, Ill.**, has developed its "short-turn overhead trolley system" for material handling employing short-radius curves, switches, cut-outs, etc.

The **Automatic Reclosing Circuit Breaker Company, Columbus, Ohio**, announces the opening of an office at 110 Hale Street, Charleston, W. Va., with Donald J. Baker as manager.

The **Griscom-Russell Company, 90 West Street, New York City**, has recently placed on the market its low-pressure expansion joint known as the G-R type "C."

The **Permutit's Water Softening Patent Upheld**.—In a suit in equity by Permutit Company, 440 Fourth Avenue, New York City, against the Harvey Laundry Company, a user of the apparatus in question, and the Refinite Company, inventor and manufacturer thereof, to enjoin infringements of letters patent No. 1,195,923, Judge Hazel on June 15, in the United States District Court, Western District of New York, handed down a decision in favor of the Permutit Company.

The **Wheel Truing Brake Shoe Company, Detroit, Mich.**, recently celebrated its twenty-third anniversary as a company. It has also enlarged its factory space by the erection of a new plant into which the business has been moved. This change has at least quadrupled facilities for manufacturing Wheel Truing Brake Shoes, it is stated. Business is not as large in volume as in the first half of last year, but though orders are smaller individually, they are reported to be greater in number. Most customers specify immediate shipments, it is said, indicating that reserve stocks are low. Foreign business on this particular product has been light, though shipments have recently been made to Melbourne, Australia and Honolulu, T. H.

The **Buffalo Forge Company, Buffalo, N. Y.**, is now pushing construction to remodel the entire fan shop. This shop, when completed, will be one of the largest fan shops in the United States, covering 64,235 sq. ft. including 23,873 sq. ft. of assembling galleries. While this extension is in progress production continues without interruption,

and when it is completed all fan construction will be accomplished with a minimum handling. The material racks are served by an electric railway truck with automatic lift platform.

**American Di-Electrics, Ltd.**, 71 West Broadway, New York City, announces that the address of E. A. Thornwell, its Atlanta (Ga.) distributor, has been changed from Atlanta Trust Building to Candler Building.

**Charles S. Crowell**, Philadelphia manager of the Underfeed Stoker Company of America, left the latter's employ on July 1. Mr. Crowell has no definite plans for the future, it is stated but after a short vacation will remain actively in the combustion field.

The **International Western Electric Company, 195 Broadway, New York City**, announces that E. C. Richardson, who has been manager of the Western Electric Company Italiana at Rome and Milan since 1910, and who also saw foreign trade service at Antwerp has been transferred to Peking, China, as general manager of the China Electric Company—the Far Eastern subsidiary of the American electrical concern. He succeeds C. H. Minor, who has supervised the operations of the China Electric Company ever since it started business early in 1918. Mr. Minor is returning to the European organization of the International company and will make his headquarters at London.

**Cie J. G. Brill, Paris, France**, which was organized in 1908 for the distribution of the products of the J. G. Brill Company, Philadelphia, in Spain, France and Algeria, has expanded its territory to include Belgium, Italy, Switzerland and Luxembourg. The facilities of the company were also recently enlarged by the addition of new forge, machine and assembly shops and store rooms at Gallardon, 40 miles from Paris. C. B. Dubbleman, 19 Rue du Parnasse, Brussels, who has heretofore been the J. G. Brill Company's agent in Belgium and Holland, will continue as its representative in Holland, but will represent Cie J. G. Brill in Belgium. Giovanni Chechetti, Piazza Sicilia 1, Milan, will continue to handle the Brill products in Italy, but as the representative of Cie J. G. Brill.

The **Nichols-Lintern Company, Cleveland, Ohio**, manufacturer of car ventilators, sanders indicating signals, etc., reports several recent sizable orders for mechanical sanders, among which are fifty-two equipments for the Pennsylvania & Ohio Electric Company; 400 equipments for the New Orleans Railway & Light Company (both of these orders including hoppers and all accessories), and 150 equipments for the Massachusetts Northeastern Street Railway. Orders have also been received from three other traction companies and two steel companies recently. Since Jan. 1, 1921, it is stated, a total of 550 N-L indicating signals have been specified and ordered. The Railway & Power Engineering Corporation, Ltd., Toronto, Canada, which manufactures and sells Nichols-Lintern products in Canadian territory, has recently received orders for 200 equipments of N-L indicating signals from the Toronto Transportation Commission and for 2,000 N-L ventilators from the Canadian Car & Foundry Company.

## New Advertising Literature

"**Phono-Electric**" Trolley Wire.—Bulletin No. 15, the June 1921 issue of "Phono-Electric" published irregularly by the Bridgeport Brass Company, Bridgeport, Conn., is printed in French. It is being distributed among the electric railway trade in France.

The **R. Thomas & Sons Company, East Liverpool, Ohio**, manufacturer of porcelain insulators, etc., has just issued a new catalog on "Standard Electrical Porcelain" which includes a number of interesting features. Dimensions of the various products are given in both inches and millimeters, export as well as domestic shipping weights are included and a code word for each item is listed.

**J. G. Brill Company, Philadelphia, Pa.**, has issued Volume 11, No. 12, of the Brill magazine, dated June, 1921. This is the second copy of this publication to be issued since May, 1918, the first having appeared in June, 1920. The general adoption of the safety car has standardized equipment to such an extent that there is less interesting material available for publication, and hence the magazine at present appears only occasionally. The current issue describes cars recently shipped to Brazil, South Africa and Cuba, as well as gasoline-driven motor omnibuses and trailers made by the company.