Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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A New Plan for the Liberty Loan Campaign

THE national Liberty Loan Bureau has approved a plan, which appeals to us as an excellent one, for stimulating the "win-the-war" spirit of employees of utilities and industrial concerns. Primarily it consists in the holding of win-the-war meetings prior to the opening of the Fourth Liberty Loan campaign, with programs designed to impress upon employees the urgency of bending every effort to put the country upon an actual war basis. While the success of the Fourth Liberty Loan is the goal immediately in sight, this is only an incident in the race for the ultimate goal—Victory! The details of this plan are announced by the Liberty Loan Committee in a statement in the advertising pages of the issue. Any company which wishes to take advantage of the offer by the committee of the booklet mentioned has only to fill in the coupon on the page and mail it to us. Electric railways and manufacturers of electric railway supplies have in this movement an excellent opportunity to join with patriotic employers in other industries everywhere in "putting over" the coming big loan.

Solid Manganese Versus Manganese-Insert Special Work

IN ANOTHER part of this issue we publish a short article by W. L. Whitlock relative to the comparative performance of the solid manganese and the manganese-insert types of construction as found in the same special work layout at given locations in Denver where the traffic conditions were similar. It will be noted that in the situation quoted the comparison seems to be unfavorable to the insert type. Nevertheless, we would not condemn the insert type of special work as a result of this performance, because it appears from a careful reading of the article that the insert type under consideration is that wherein the insert is set upon the ordinary or old-style spelter bed, presumably without any attempt at either partial or complete machined bearing. For this reason we should expect that the solid manganese type would give the better service under the same traffic, provided that there was good fortune in obtaining the solid pieces substantially free from hidden defects at the intersections.

It seems to us that the article in question tends to strengthen and confirm the opinion expressed in an editorial in the issue of this paper for Sept. 19, 1914, to the effect that bolted-down or keyed-down inserts on partially or completely machined bearings are believed to be necessary to meet present-day heavy traffic conditions, and it is our understanding that the manufacturers are now providing the machined bed in most of their orders unless definitely instructed to the contrary. Furthermore, the specifications of the American Electric Railway Engineering Association now call for partially or fully machined bearing for the iron-bound, hard-center insert type of special work construction.

Expenses Await No Laws—Revenues Should Be Increased Now

HOW strikingly illustrative of the tendency of the times is the fact that a petition for a higher rate of fare was presented at the same session of the Chicago City Council at which a service-at-cost ordinance was approved. This ordinance, reviewed previously in these columns, provides for a basic 5-cent fare and gives authority to the board of trustees to charge for transfers or raise the fare if necessary to meet the cost of service. The ordinance is not expected to go into effect for at least a year. Were it now effective there would be no question about the method of solving the problem raised by the recent awards of the War Labor Board. Unfortunately, however, that relief cannot come too quickly if the Chicago surface and elevated companies are to be saved from financial disaster.

When the aldermen of a city approve a service-at-cost measure in the public behalf, it would seem a logical sequence that financial relief be given to the company if necessary pending a public vote on the ordinance. If there is equity in a franchise based on service at cost, prompt and fair judgment should be given to the appeal of the Chicago Surface Lines for city co-operation in securing higher fares. Similarly, the State Utility Commission should be influenced by the ordinance vote of the aldermen when considering the petition of the elevated lines, which is referred to on another page of this issue. A fair-minded public will expect to pay for service when the cost is high, just as it expects to get the benefits of low fares when costs have been reduced.

Can the Local Public Always Be Trusted?

WILL the car riders of Buffalo insist on having their pound of flesh? Their intention to do so might fairly be presumed from the recent action of the people of that city in voting against the City Council resolution which would have authorized the Public Service Commission to fix higher street car fares. Thus complete failure marks the end of the first attempt to cross the barrier raised by Rochester decision of the Court of Appeals. This decision, it will be recalled, denied that the regulatory law had conferred upon the

commission any power to alter franchise rates without municipal consent.

At the time of the decision we made the comment that New York had been turned back to the Stone Age of regulation. The result of the referendum in Buffalo has confirmed this opinion. The people of that city, having made a 5-cent fare bargain with the local company years ago, are evidently determined to insist that the agreement be carried out even though an essential utility be forced into bankruptcy. The people had the right to make this choice under the court's interpretation of the Buffalo charter. Time will prove, however, that they have used their worst judgment in their own interest.

The electric railway companies in Buffalo and other New York municipalities, however, cannot subsist merely on the educative influence of time—they must have money now. Unless many companies secure relief at once from their franchise obligations as to rates of fare, bankruptcy is inevitable. Surely there must be a way out of this crisis. If the authorities feel that the companies' interests must be safeguarded, they should disregard the senseless opposition of short-sighted agitators and have the commission law amended so that justice can be done. Action is needed, and at once.

Mail Carriers Should Pay Their Cost of Transportation

DISCUSSION of the terms of a new traction ordinance in Chicago recently brought out the fact that the United States government is paying only about $25,000 for the transportation of postal employees in that city, whereas the actual cost at the regular rate of 5 cents a ride would come approximately to $145,000. The mail carriers were trying to persuade the aldermen that the old arrangement should continue. Under the 1907 franchise this compensation was satisfactory for a while because it covered practically the number of men whose routes were a considerable distance from the mail stations. This time, however, the aldermen had under consideration a different kind of ordinance—one in which the people would pay the actual cost of service. The aldermen were now bargaining for their constituents, and they did not want the cost of service burdened with an item which they thought should be carried by the federal government. They left the appeal of the mail carriers for adjustment by a subsequent City Council.

Aside from any interest in the charges which the car riders of Chicago may be asked to carry, the equity of this situation would appear to call for action by the Post Office Department. It may be true that the mail carriers can ill afford to pay for the numerous rides they must make on their daily rounds in the public service. In most cities the Post Office Department provides them with tickets for transportation. The Postmaster General may be anxious to keep down operating costs in his department, but this should not be done at the expense either of the mail carrier or of the passenger who is paying for the entire service. Our government has a heavy burden to carry these days, but this does not justify the evasion of any positive responsibility. Let the Post Office Department pay for its cost of service, and let the car rider pay for his share.

Developing an "Industry Consciousness" Among Electric Railways

THE most important point made at the recent New York conference of electric railway executives, held under the auspices of the Electric Railway War Board, was that electric railways must for their own preservation give up their purely local characters and demand recognition as a national institution. This is absolutely essential if the nation is to be brought to a realization of what this great utility has been and now is, in the national life. It is essential also if the public is to be convinced that the electric railway business is actually at this minute in a critical condition. For the latter purpose, as several speakers at the conference said with semi-ironical humor, it may be necessary for one or more "sacrificial offerings" to be made.

One of the principal stumbling-blocks in the path of the railways is the belief of the public that the utility is not in as serious a condition as it claims.

In an editorial last week entitled "Federal Government Increasingly Powerful in Electric Railway Affairs" we pointed out a number of ways in which war conditions had forced electric railways to come within the national purview. In order that the federal government may have something tangible with which to deal, it is obviously necessary that there be recognized such an entity as the electric railway industry. This was what speakers at the New York conference meant when they urged the development of an "industry consciousness."

The practical question in all of this discussion is how an industry consciousness is to be developed. It seems to us that the first step is to agree upon certain principles regarding which there can be no dispute; and the second step is to see that the public understands exactly how these principles work out when applied to the present and future conditions of the electric railway business.

The fundamentals as outlined by Britton I. Budd, in last week's issue of this paper, will be excellent to start with. First, it must be agreed that the utility is a partnership of employees, public and owners, working together to supply a vital economic necessity, good transportation. Second, the cost of this service will be determined by the market price of labor of the necessary quality, the market price of the necessary funds, and the service which the public desires. Third, the selling price of the commodity is determined by its cost.

Now it is self-evident that transportation cannot be sold for long at less than cost, and the temper of Americans is such that they are not asking for charity here or elsewhere. Let them, therefore, be convinced, from facts, that the transportation service which is prescribed for them by their public service commissions is being sold below cost and that the companies cannot continue it, and then justice will be done.

But entirely aside from justice to the property, a larger task just now is to keep the properties going; to maintain even present standards, let alone improving them. This requires increased income—to get it seems to mean for the moment federal aid. To secure this, in turn, involves a united front, in other words, an "industry consciousness."

Three Men Thought Necessary to Operate a Car!

HOW times do change! Looking back over our files, we find a report made in 1903 to the Merchants' Association of New York by its committee on engineering and sanitation. There is much of merit in this report on the passenger transportation service in New York City. The men who wrote it had the co-operation of practical transportation men in their study of the local problem. We find, however, a recommendation "that upon the congested lines, on all cars having a length of car body of 28 feet or over, two men in addition to the motorman should be employed, at least during the rush hours." The committee thought this would expedite the movement of cars, minimize accidents and, in general, add to the convenience of the traveling public.

Of course, this was before the day of the prepayment car, which adequately took care of the situation the committee intended to meet. The point in this recommendation which appeals to us now, however, is the thought that electric railways were ever considered financially able to sustain such a luxury as a third man on the platform. Here in 1918 we find the average company barely able to make a living. Economies have been adopted in every department, and there is a growing tendency to operate with one man rather than three per car. What a strange exhibit of extravagance would be offered by the management which should now attempt to put two conductors on the rear platform and then go to a public utility commission seeking a higher rate of fare! Truly we are justified in saying: "It can't be done."

Bringing Out and Developing Latent Talent

EVERY aggregation of individuals is the repository of some talent, much of which is latent or potential because there has not been the occasion for bringing it out and training it. The talents which many men possess and which are not required in the ordinary routine of their every-day work are often more characteristic of the men than the qualities which they exhibit from day to day.

In other words, it is possible that the real man may be manifest in the doing of things entirely outside the routine of the office, shop, track or power house. That this is so is illustrated in the company section notes which appear on our Association News pages from week to week. These show that the section members can entertain acceptably with music, recitations, boxing, etc. Moreover, they can write instructive and uplifting papers on subjects of railway and other interests. Further, they can conduct campaigns for patriotic loans, war gardens, food conservation, better public relations and many other worthy causes.

Obviously employees' organizations, such as the company sections, afford a splendid means for training along such lines. Success in this direction is twofold; first it is necessary to find out what the men are now able to do in the way of assisting, instructing or entertaining their fellows. In the second place, success consists in affording them the opportunity and means for developing their talent. This should be the dominant idea in planning programs and committee activities, as well as in the organization of the section as a whole. No section can possibly fail if behind it are a recognition of the principle outlined above and an intelligent plan for applying it.

Protecting Our Property from Fires in War Times

JUDGING from the large number of disastrous carhouse fires which have occurred within the past year, the matter of fire protection is a pertinent one. Undoubtedly war conditions tend to increase the ordinary fire hazard, and in some instances enemy agents may have had something to do with the fires, which, by crippling local transportation, hampered our war activities. As was pointed out, however, in a symposium on the subject at the last convention of the American Society of Mechanical Engineers, the essentials of the fire protection problem are the same now as in normal times, and the methods of combating the fire hazard developed in times of peace are still the most efficacious. In this connection United States Attorney General Thomas W. Gregory is quoted as saying: "Statistics show as the chief dangers menacing private manufacturing plants those which originate or are developed within their own boundaries. The real protection needed is protection within the plant itself, and the prime responsibility for the internal protection of workshops and factories rests, as it always has rested before, upon owners and managers."

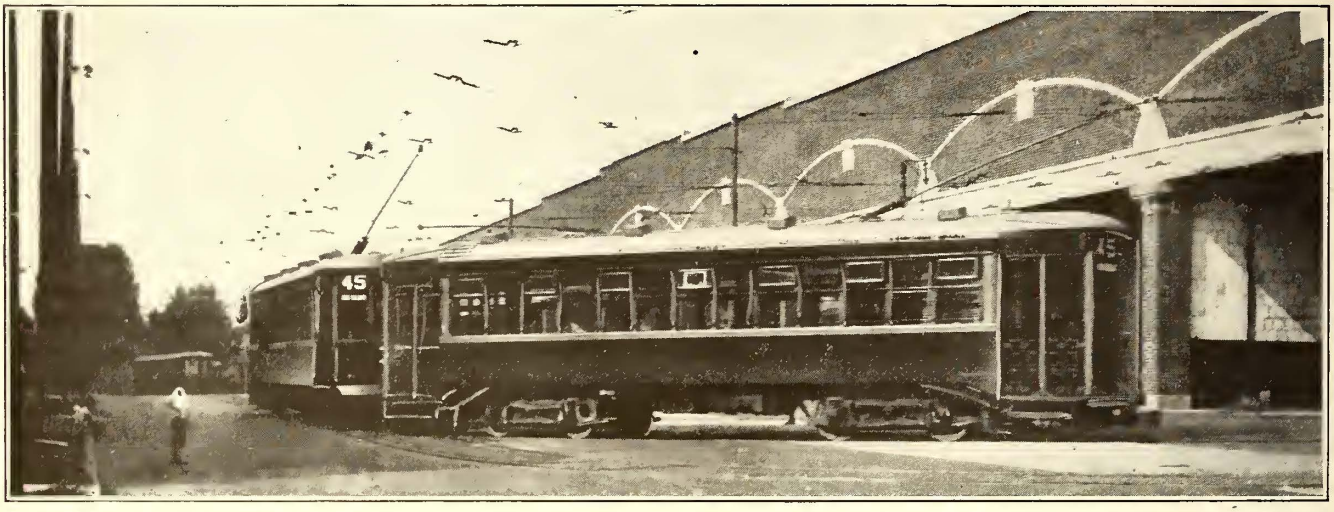
In all probability these remarks apply to the electric railway industry quite as well as to the manufacturing industries concerning which they were made. Oils, paints, oily waste, wood and the other inflammable materials used in car construction are found in electric railway shops and carhouses. These, taken together with grounded circuits, form a not altogether happy combination from the standpoint of the fire hazard. It may well be that the large labor turnover and the lack of trained employees also had something to do with last year's fire losses.

But how can the fire evil be combated? The insurance rates may be regarded as the truest measure of fire danger, and a study of such rates leads to the conclusion that those buildings which have automatic sprinklers and other auxiliary protection are about as safe from the ordinary fire as it is humanly possible to make them. Where fires have occurred in sprinkler protected buildings disastrous results have occurred only where the sprinkler system has been inoperative because of shutting off or inadequacy of the water supply due to defects in the equipment, or to the presence of a number of unsprinklered sections.

But fire-fighting equipment provides at best only a "remedial" type of protection. It seems logical to put at least as much stress on "preventive" protection. Such "protection means the segregation and isolation of all" inflammables and explosives, scrupulously clean premises and adequate supervision. There is much that can be done in a construction way, even with old buildings. What is everybody's business is usually nobody's business, and the entire matter of fire hazard and fire protection must be handled in a businesslike manner by officials vested with sufficient authority to get decisive results.

High Passenger Density the Outstanding Feature of New Service to Hog Island

The Philadelphia Rapid Transit Uses Train-Operated Surface Cars of Large Standing Capacity to Carry the Shipbuilders—The Heavy Rush-Hour Traffic Imposes Severe Service Requirements Upon the Rolling Stock—New Features Are Incorporated in the Door Control and Interlocking System



GOING AFTER THE HOG ISLANDERS

THE heavy passenger traffic suddenly thrown on one corner, as it were, of Philadelphia's transportation system by the development of Uncle Sam's big shipyard at Hog Island, necessitated a considerable increase in the available equipment of the Philadelphia Rapid Transit Company. As was noted in the news columns of the ELECTRIC RAILWAY JOURNAL for March 16, 1918, 100 new cars were purchased from the J. G. Brill Company, specifically to take care of the service to this shipyard. The funds necessary to cover the cost of these cars were provided by the Emergency Fleet Corporation under an agreement the general terms of which were published in the ELECTRIC RAILWAY JOURNAL for Aug. 3, page 186.

The transportation of the 30,000 shipbuilders to and from the scene of their daily labors is, of course, rush-hour traffic of the most severe type. This and the isolated location of the shipyard, taken together, result in a very high passenger density per mile of track. The passenger interchange movement is practically always unidirectional. In the morning the load is gathered up in the housing districts and at the transfer points, and as the cars are used exclusively in the shipyard service, few stops are made to discharge passengers until the Hog Island terminal is reached. In the evening the traffic flow is, of course, just the reverse, that is, the cars are loaded to capacity at the shipyard and discharge their loads in small groups at the transfer points while passing through the housing districts.

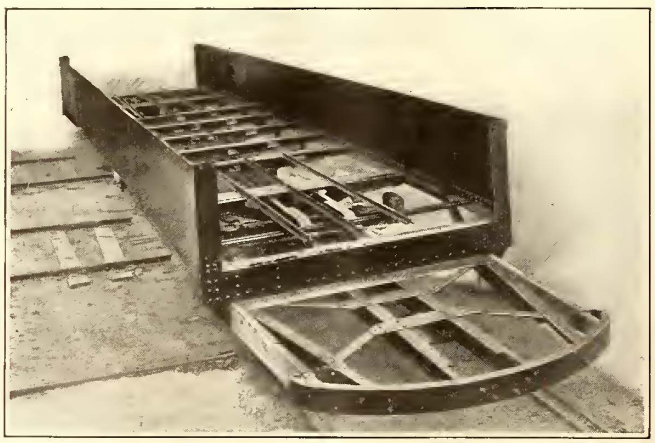


FIG. 1—UNDERFRAMING DETAILS OF THE HOG ISLAND CARS

The cars purchased to take care of this service were selected with particular reference to their ability to load large groups of passengers quickly and safely and to provide ample standing room. Their principal dimensions and other features are given in the table on page 408.

SEMI-STEEL BODY CONSTRUCTION IS USED

The framing is of the straight-sided type, the sheathing being made up of steel sheets $\frac{3}{32}$ in. thick, securely bolted to the posts, and riveted to the angle sills at the bottom and to the belt rail, 3 in. x $\frac{1}{2}$ in. in cross-section, at the top. The top plates into which the side posts are mortised are of yellow pine. The letter panels are of poplar, securely glued together before machining, and held in position with flattened iron screws. Angle bars 5 in. x $3\frac{1}{2}$ in. x $\frac{5}{16}$ in. in size are used for side sills, and at the bolsters the sills are reinforced with angle bars of the same size. The end sills are of $\frac{3}{16}$-in. plate

bent to Z-shape, and they are securely attached to the side sills by means of gussets. The bolsters are of cast steel bolted to the side sills and provided with suitable openings for the brake rod and cable conduit. The bumpers are of 6-in., 13-lb. channels, and each end of the car is equipped with a Rico anti-climber extending the full width of the bumper. The details of the underframing are well shown in Fig. 1.

In order to provide for low step heights, the flooring at each end of the car body, starting at a point about 5½ in. back of the bolster, is laid with a ramp so that it is 2 in. lower at the vestibule door than elsewhere in the car. The flooring between the aisle and the sides of the car is in two layers, laid lengthwise with building felt between. The top layer is of ⅝-in. hard maple and the bottom of $\frac{13}{16}$-in. yellow pine. Floor mat strips extend the full width of the aisle and are of hard maple spaced about ⅝ in. apart at the bottom and secured to the floor with countersunk iron wood screws. The roof is of the plain arched type, extending the full length of the body and supported by a continuous steel carline at each post. The carlines are forged into a single piece the shape of the roof from ⅜-in. x 1½-in. steel. The hoods are detachable and have wood carlines. The roof covering is of No. 8 cotton duck. One trolley board of yellow pine extends the full length of the body.

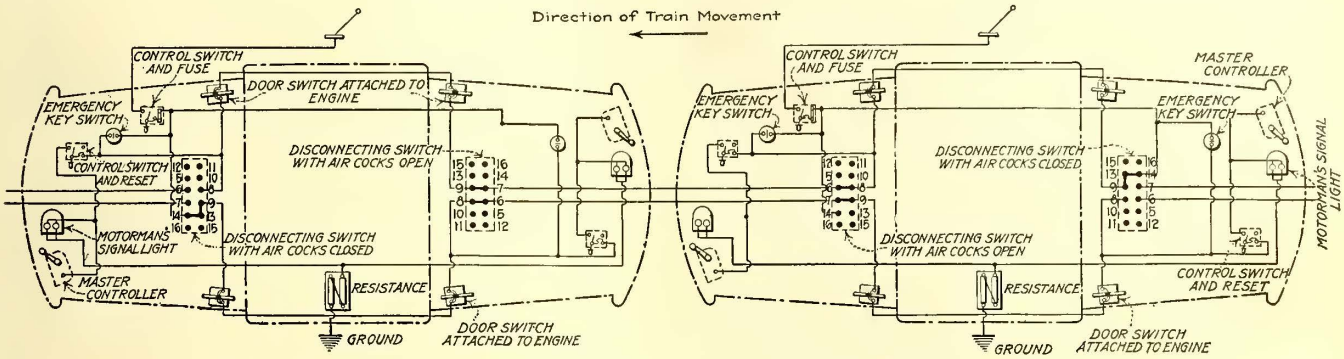


FIG. 2—DOOR AND CONTROL INTERLOCKING CIRCUITS

Special Provision Is Made for Train Operation

Each end of the car is provided with a round-end vestibule having three window openings in the front. The inside paneling of the vestibules is reinforced at the top with ⅜-in. x 3-in. iron braces, to which are bolted the brackets for the controller, engineer's valve, brake shaft, and other apparatus. Bulkheads without doors are provided at each end of the car. Each side of each platform is provided with doors, four in all, hinged in pairs to fold outwardly. The lower portions of the doors are paneled with cherry and the upper portions glazed with double-strength glass. The doors are equipped with National Pneumatic door-operating mechanism, and are so arranged that when the cars are operated in trains the conductor on the rear platform of one car can open the door on the front platform of the trailing car.

In order to secure this operating feature and to render the interlocking between the doors and motor control system more nearly "foolproof" a number of innovations have been introduced in the interlocking and door-operating apparatus.

A sketch of the interlocking circuits is given in Fig. 2. The apparatus consists of the usual door switches in series with the energizing circuit of the master controller and some additional contacts and lines in the disconnecting switch and circuits of the Tomlinson automatic air and electric couplers. The fundamental purpose of this disconnecting switch is to de-energize the motor-control circuit contacts on a coupler when it is not connected to the coupler of another car. The switch is of the drum type and is interlocked with the cocks in the airbrake lines so that the act of operating them also operates the switch. It is located back of the coupler under the end of the car body. The shaft of the drum is connected by means of bell cranks and a

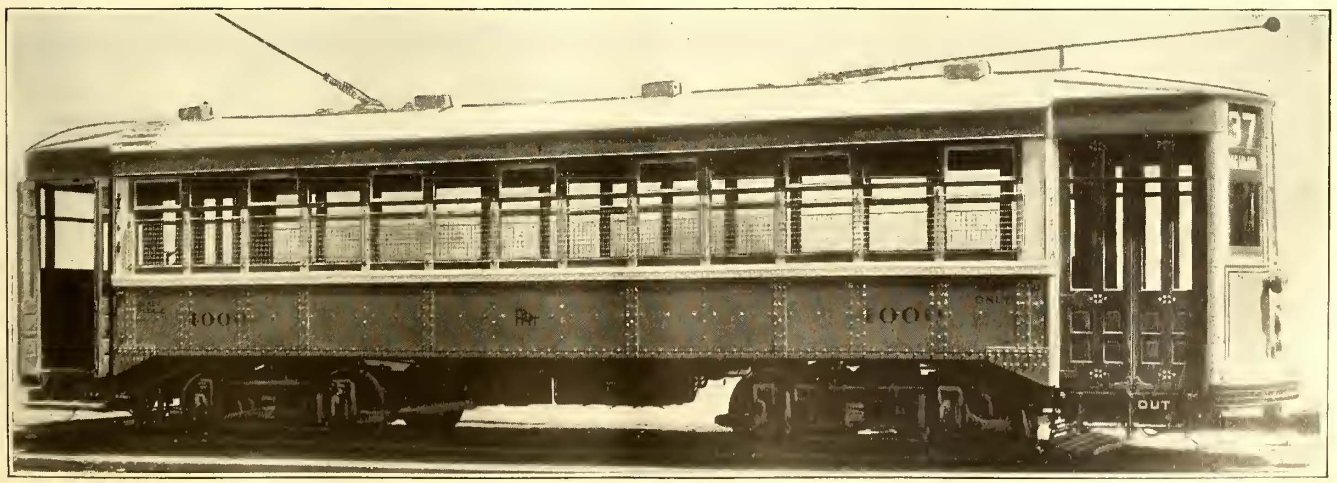


FIG. 3—GENERAL VIEW ILLUSTRATING MAIN STRUCTURAL FEATURES OF HOG ISLAND CARS

connecting link to a horizontal rod or shaft which ends under the car sills. The end of this rod is squared off so that the handle of the master controller can be used to operate the switch and air-cock combination.

The operation of the interlocking circuits can be understood best by actually tracing the circuit through. With a two-car train the coupler disconnect switch contacts will be connected as shown in Fig. 2. From the trolley on the trailing car the circuit can be traced to the control switch and fuse, to contacts 14, 13 and 9 on the rear disconnect switch of the trailer, to the right-hand door switches of the trailing car through the couplers and right-hand door switches of the leading car to the control and reset switch and thence to the master controller and through the control circuits to ground. With any one of the four sets of doors on the right-hand side of the train open, the train cannot be started since the control circuit would be open at the open door. The doors of the left-hand side of the train are not involved in this circuit since, as will be seen later, they are automatically locked with the direction of train movement indicated in the sketch.

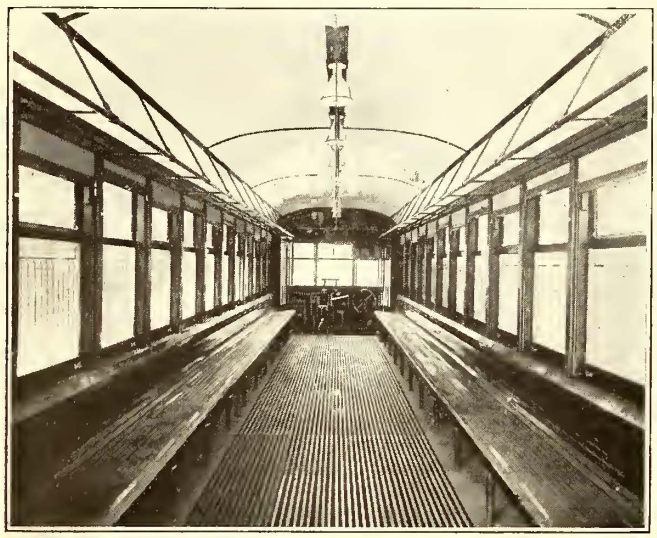


FIG. 4—INTERIOR VIEW SHOWING SEATING ARRANGEMENTS AND OTHER INTERIOR DETAILS

In the circuit traced, energy was considered as coming from the trailing car. As a matter of fact, the cars are actually operated with only the leading trolley pole in working position. They are connected with a train-bus jumper, however, so that the circuits are the same as those traced out except that the energy comes from the train bus instead of the trolley on the trailing car.

For single-car operation the coupler disconnect switches are in the positions marked "Disconnecting switch with air cocks closed." The interlocking with the air cocks, of course, eliminates the possibility of moving the cars with the disconnect switch in the wrong position. The innovation in the interlocking circuit is that with the arrangement described the operation is entirely automatic and a crew, in making up a train, perform only the operations necessary with any airbrake equipment. In case of failure of any of the door switches, a car can be operated back to the carhouse by closing the emergency switch which short circuits the door switches. This switch is located on the vestibule side of the end of the car body near the ceiling. Its position near the heater switches is shown in Fig. 7. It can be operated only by means of a special key.

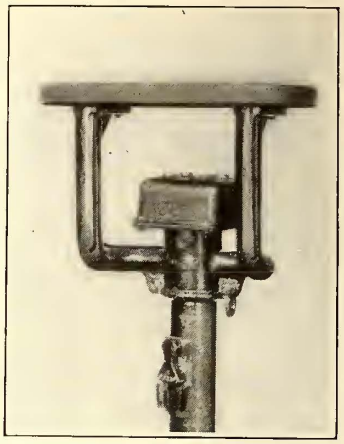


FIG. 6—DETAILS OF CONDUCTORS CONTROL STAND

As will be seen in the figure, lamp signals are used to give the starting signal. They are located on the dashes just to the left of the air gage, Fig. 4. To provide against the hazard of a lamp failure two lamps, connected in parallel, are used. The resistance in series with these lamps is such as to give a lamp voltage of 110.

Many New Features in the Door Control

The requirements of double-end train operation, of the operation of the front door of the trailing car from the conductor's position in the leading car, the locking of all doors except those on the operated side and the locking-out of all door-control stands except those at which members of the train crew are stationed involved a number of interesting and complicated problems. The solutions of these problems are shown in the sketch in Fig. 5. Two push buttons, one marked "open," the other "close," are located at each motorman's position and four, as shown in the diagram, at each conductor's position. The motorman's buttons are

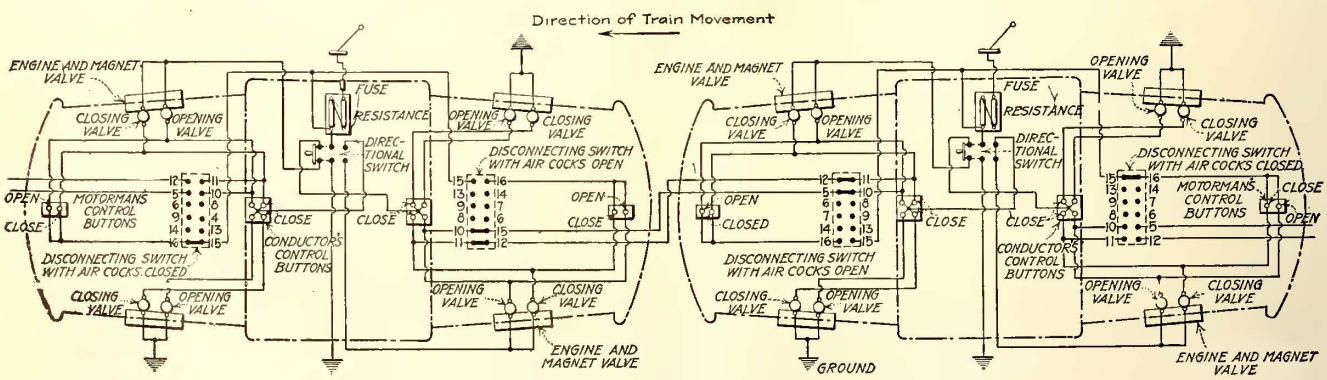


FIG. 5—DOOR OPERATING AND LOCKING CIRCUITS

mounted at the top of the dash between the master controller and the brake valve and those for the conductor at the top of the conductor's control pedestal under the wooden change tray which is provided on these cars. The button housing appears as a cap on the pedestal in Fig. 4 and is shown in greater detail in Fig. 6.

The door engines employed are of the usual type but their operation from another car has necessitated other contacts in the coupler disconnect switch in addition to those employed by the door interlocking circuits already described. A directional switch, which is mounted in one of the vestibules just above the door engine, Fig. 7, is also required. This is a double-pole, double-throw switch so connected that the handle must always be thrown in the direction of train operation or the doors can not be opened from the control positions. The operating circuit is connected to the trolley through a resistance which reduces the electric pressure to about 32 volts. It is entirely independent of the door and motor-control interlocking circuit.

How the Doors Are Operated

To illustrate the operation of the system, the circuit can be traced from the resistance to points 15 and 16 on the coupler disconnect switch, and thence to the motorman's buttons and the door-engine magnet coils to ground. By means of a circuit through the directional switch, the conductor at the rear of the leading car can operate both the doors at his side and, through a circuit in the coupler, the doors in the front end of the trailing cars. All of the buttons, except the three groups at which crew members are stationed, are locked out by being placed on dead circuits. It will also be noted that the left-hand doors are all inoperative because with the directional switch thrown as indicated their operating coils can not be energized. For operation in the reverse direction, it is of course necessary to throw the switches in the corresponding direction. To provide for the emergency of opening the doors with no power available, a small lever attached to the magnet valve of the opening cylinder projects from the closet in which the engines are housed. Pulling on this lever will admit air to the cylinder and thus open the doors. The engines are mounted on a steel plate which also holds the bearing of the doorshaft, thus maintaining a fixed relation between the engine pistons and the door shaft.

The engines are lubricated with a sort of splash system in which the central chamber between the two pistons is filled approximately half full of lubricant. Provision is made for reclaiming the lubricant emitted in the exhaust and returning it to the central chamber.

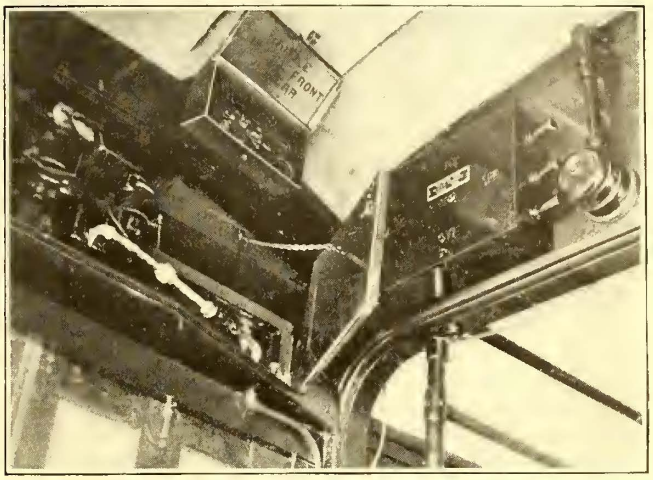


FIG. 7—VIEW OF VESTIBULE HOOD SHOWING DOOR CONTROL SWITCHES

With this system the engines can be operated in ordinary service for about two years without relubrication.

Four-Motor Equipment Was Chosen

The motive power consists of four General Electric 247-C motors with type-PC multiple-unit control. Each car has two Ohio Brass type-Z headlights and the necessary circuit arrangements to permit the application of a portable headlight. Interior illumination is secured from ten 23-watt Mazda lamps spaced along the center of the car ceiling, and one light on each platform. Safety car-lighting fixtures with heavy density opal reflectors constitute the accessory equipment. Each car is also equipped with Nichols-Lintern automatic tail lights, of which a complete description was published in the Electric Railway Journal for Aug. 3, 1918, page 203. These lights permit the safe and economical

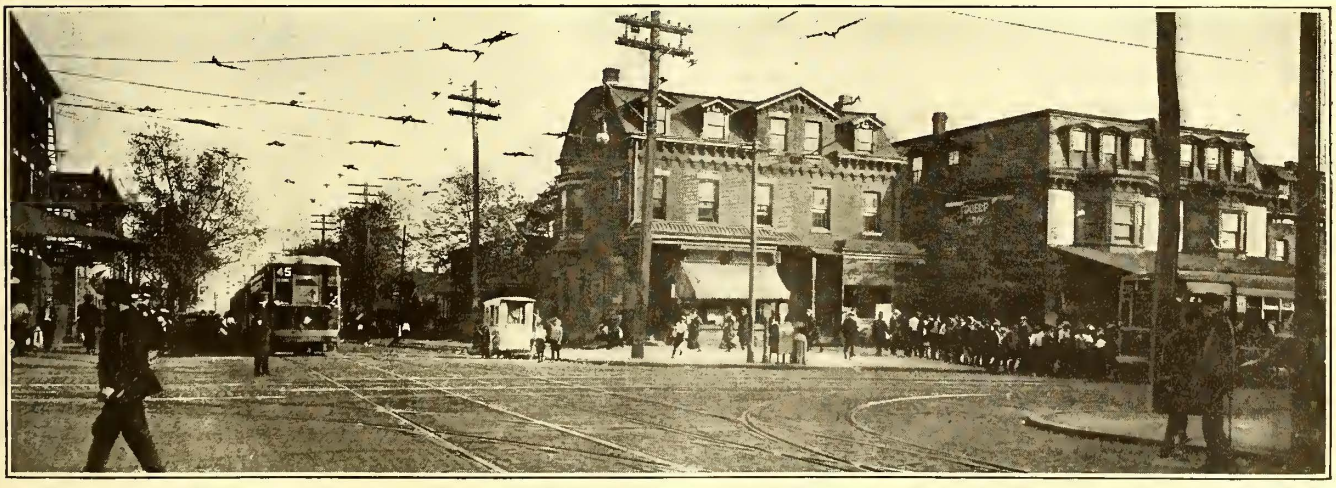


FIG. 8—WOODLAND AVENUE AND FORTY-NINTH STREET—A HEAVY TRANSFER POINT ON THE HOG ISLAND LINE

operation of the cars on the necessarily congested tracks.

Brill 77-E-1 trucks carry the car bodies. These trucks have a 5-ft. 9-in. wheelbase and are equipped with 33-in. rolled steel wheels. The wheels are mounted on Valley steel, heat-treated, standard E-5 axles. The trucks are provided with standard Brill center bearings, Perry side bearings, Anderson slack adjusters, Brill cast-steel bolsters, the Brill graduated spring arrangement, the Brill bolster guide arrangement, and Brill semi-steel journal boxes.

Interior Arrangement Provides Ample Standing Room

As illustrated, the cars are equipped with longitudinal seats of the wooden slat type. This arrangement gives a seating capacity of fifty-two persons and provides for large standing capacity. As many as 200 passengers have been carried per car during the rush-hour periods. A motorman's folding seat of the Keystone type, arranged to fold against the inside vestibule lining, is installed in each end of the car. A Philadelphia Rapid Transit Company's standard conductor's seat is attached to the conductor's control stand.

The car interior is of cherry, stained and finished dull. All moldings are of plain design so as not to catch dust. The ceiling is of Nevasplit, painted white, and is held in place by a suitable molding which is secured with bronze oval-head brass screws. Moldings for advertising cards run the full length of the side decks. Twenty-six pushbuttons are provided for the convenience of the passengers in signaling stops, Consolidated equipment of the high-voltage type being used for the purpose.

General Electric emergency straight-air brakes arranged for train operation, and National staffless hand brakes constitute the braking equipment. A summary of other accessory equipment was published in the issue of the ELECTRIC RAILWAY JOURNAL for March 16, page 552.

The new cars are about 12,000 lb. heavier than the large, nearside, pay-as-you-enter cars now in service on a number of the surface lines of the company. Another point of difference is that the older cars are equipped with maximum-traction trucks and consequently carry only two motors.

DATA OF P. R. T. HOG ISLAND SHIPYARD CARS

Length of car body over anti-climbers	45 ft. 6 in.
Length of car body over corner posts	33 ft.
Width of car body over sills and posts	8 ft. 4 in.
Extreme width of car body, maximum limit	8 ft. 6 in.
Height from rail over trolley board	11 ft. 8 in.
Truck centers	21 ft.
Height from rail to top of first step	14 15/16 in.
Height from top of step to platform floor	13 1/2 in.
Height from platform floor to car floor	10 3/4 in.
Radius of shortest curve that can be rounded	35 ft.
Total weight, empty	44,000 lb.

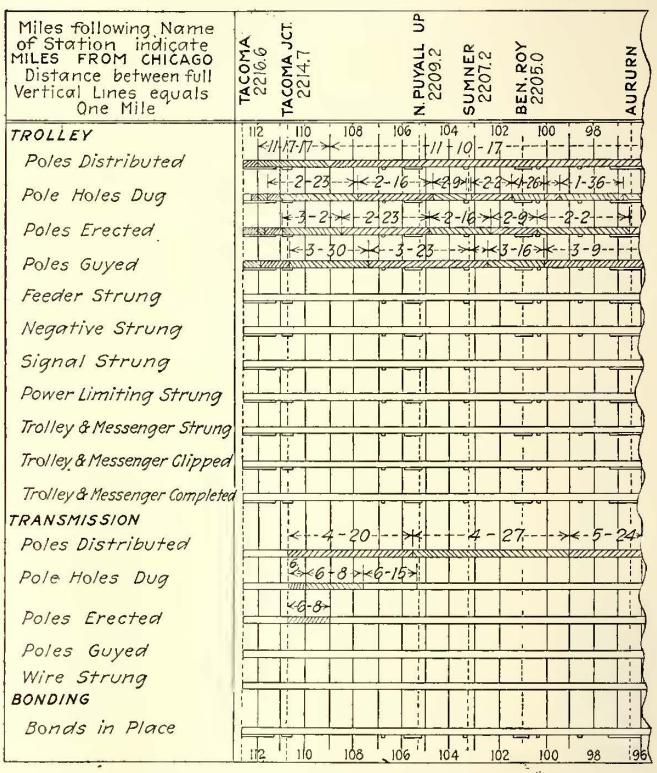
The War Industries Board, through its employment management division, has arranged courses of instruction in employment management at a number of educational institutions. The only cost is that incident to living expenses and about $15 for text-books and supplies. The idea is to train those who have to do with the "hiring and firing" of men so that the best results can be obtained with the available labor supply.

Progress of St. Paul Electrification Out of Seattle

All Buildings Have Been Erected Except at One Station—One 113-Mile Section Is Complete with Poles and Fixtures

DESPITE the nation-wide handicap of labor shortage, the electrification of the Seattle-Tacoma division of the Chicago, Milwaukee & St. Paul Electric Railway is making good progress. All of the substation buildings are up except Renton, which has just been started; and even some transformers are reported by the Westinghouse Electric & Manufacturing Company as ready for shipment. At each station three bungalows are built for the three shifts of operators.

Between Cle Elum and Tacoma, 113 miles, poles and fixtures are practically complete, and about one-third is



PART OF PROGRESS CHART FOR LINE CONSTRUCTION ON THE ST. PAUL ELECTRIFICATION

done on the remaining section eastward for 98 miles to the Othello terminus of this division. The steel overhead structure for Renton is still to go up, while the unification of terminals at Tacoma is delaying work there until it is definitely determined what tracks shall or shall not be electrified. A sample chart used in checking progress on the work is given above.

Separate schedule progress charts are made covering signals, individual substations and the Tacoma-Cle Elum and Cle Elum Othello sections. The line progress report reproduced in part relates to the first 16 miles out of Tacoma. The small additional horizontal lines denote extra tracks as sidings and yards. The top of the complete line chart shows in addition to "crews" and "average number of men," the items of "work trains," "week ending" and "weather conditions." Operation of the Othello-Tacoma (Seattle) division is expected to begin in July, 1919.

Railways Facing a Crisis

The Public and Public Authorities Must Recognize the Seriousness of the Present Emergency

By W. W. HARRIS
Of Lee, Harris & Lee

TO THOSE who are willing to face the facts there can be no question that the electric railways face a crisis, and that the crisis is one apparently demanding federal legislation.

Notwithstanding the widespread efforts of electric railways to secure the permission of authorities to increase their fares, the general response has been neither immediate nor adequate. The opposition to increase of fares is still too wide-spread, and in many places too bitter to permit hope of a general settlement by local authorities. While Nero fiddles Rome burns. That this statement is not overdrawn is evidenced by the report just submitted to the government by J. A. Beeler. After investigation in the principal centers of war industry he asserts that electric railways the country over are running into bankruptcy and ultimate collapse. He declares it his belief that neither the government nor the communities realize the truth and urges the appointment of a federal administrator.

The President, the Secretary of the Treasury and other officials of our government have called the attention of local authorities throughout the nation to the imperative necessity of coming to the rescue of the embarrassed railways. While it is true about 250 companies have had various forms of increase in fare, there are still about 300 companies whose petitions remain to be acted upon, and more than 1000 companies whose business cannot help but have been seriously affected by war conditions. Possibly no other essential business has been so seriously affected by rising costs.

Nevertheless notwithstanding the appeal of the officials of the government, notwithstanding the appeals of the leading civic bodies in the large cities, certain interests—possibly to their political advantage, though in this I believe they are woefully mistaken—have opposed every move of the companies looking toward increased fares.

The government has announced that it is at present unable to exert its authority toward a definite settlement of this problem. This is why one is justified in saying that a crisis impends. Legislation by Congress looking toward federal action would meet this crisis. In New York or other states where public service commissions are without power to alter franchise rates, nothing less than speedy action by the legislatures—in special session if need be—will serve.

Not a Struggle for Profit

It does not seem to have been yet driven home into the consciousness of regulatory officials that higher fares are a war-time necessity and not a source of profit. Ex-President Taft and Frank P. Walsh, joint chairmen of the War Labor Board, in a report sent on Aug. 2 to President Wilson said:

> The increase in fare must be given because of the imminent pressure for money receipts now to keep the street railroads running so that they may meet the local and national demand for their service.
>
> Over-capitalization, corrupt methods, exorbitant dividends in the past are not relevant to the question of policy in the present exigency. In justice the public should pay an adequate war compensation for a service that cannot be rendered except for war prices.

At a meeting recently held in the City of New York about 150 men representing more than 500 railways discussed the general situation and especially the enormous wage awards of the National War Labor Board. Philip H. Gadsden for the War Board of the American Electric Railway Association made a statement in which he said:

> Statistics compiled by the Commissioner of Internal Revenue show that in 1916 the gross income of the electric railways of the country was $672,000,000 and that the net income was about $70,000,000. In 1917 the net had declined to $35,000,000, while the reports received from 154 companies, covering their operation for the first three months of 1918, showed a decline in net of 94½ per cent.
>
> This is for a period before the awards of the War Labor Board had become effective.
>
> The decision of the War Labor Board in the matter of wages will involve an addition of more than $100,000,000, and such an addition will wipe out every dollar of net income and leave only enough to meet about 50 per cent of the fixed charges, which in 1916 amounted to $160,000,000.

This is the situation in the United States. In the larger cities generally it is rendered even more acute by the persistent and mistaken—if not malicious—misrepresentation of the facts to the public.

Misrepresentation Hard to Overcome

The power of long years of misrepresentation of the affairs of the transportation companies cannot be quickly overcome, even by statements of the truth. Its effect has had notable examples within a short time.

Only a few days ago a referendum on an increased fare was taken in Buffalo. The members of the city government and some of the newspapers had for a long time opposed the company. It became perfectly apparent, however, that the company, without increase of fares, faced receivership, and the city government employed outside experts to make an examination. These experts reported that the increase in fares was a necessity. This report was endorsed by a representative of the National War Labor Board.

The City Government thereupon passed a resolution in favor of a temporary increase of fares, pending a permanent adjudication by the Public Service Commission. This finding, owing to a provision in the city charter, was then submitted to the referendum of the people. But the momentum of the long campaign of misrepresentation was too great, for although the Chamber of Commerce, the banks, the Central Labor body and all of the newspapers except one came out in favor

of the temporarily increased fare, the voters rejected the proposition by an overwhelming balance.

What is the result? The city government of Buffalo has exhausted its power. The Public Service Commission has exhausted its power. The federal government says, that—notwithstanding the enormous war work going on in Buffalo—with 65,000 war workers of its 100,000 dependent upon the street cars—it has no power. The company itself is helpless. It cannot pay higher wages. Its men are quitting. If they strike, the Mayor says he will urge receivership.

Clearly the answer is immediate federal legislation or a special session of the New York Legislature. And in any case the time demanded for these is such that Buffalo must suffer in its service in the interim. This loss will cost far more than the added fare would have cost, and in the end the fare must be higher anyway.

The Problem Is Country-Wide

Similar results were recently attained in a referendum in Birmingham, Ala. Still another demonstration of the persistent force of a long period of misrepresentation is afforded by the situation in New Jersey. In that State the Public Service Railway, operating in 145 towns, demonstrated its absolute need for increased revenue. But a heated political campaign is in progress in that State, and it has been reflected in the decision of the regulatory board by which an increase in the cash fare was refused but 1 cent was allowed to be charged for transfers, under the express provision, however, that the company should submit a zone system plan to the board by Jan. 1, 1919. The company has now, owing to new increases of expense, been forced to renew the petition for increase in fare. But the same public feeling exists. Whatever be the reason, the affected cities of New Jersey will not accept the company's statement of its condition.

Results such as have been attained in Buffalo, Birmingham and in New Jersey cannot all be due to a peculiar public. They would seem inevitably to indicate that the public had not been persistently and correctly told of the company's story over a long period. For eleventh hour publicity will not suffice. The surgeon cannot save the patient already showing *rigor mortis*.

In Massachusetts, although the companies had been under regulation for more than thirty years, so that there could by no possibility be an argument that the securities had been watered, and although they had not paid dividends, or at least none comparable to the returns made to capital in other industries, there was, owing to certain loud and sinister influences, a strong public feeling against the transportation companies. Ultimately legislation was passed by which a service-at-cost plan under state regulation made possible for any company desiring it. Under another act a state board of trustees was put in charge of the operation of the Boston Elevated Railway. It was then found necessary to institute a 7-cent fare at once. Furthermore, the actual operation of the 7-cent fare has shown that it will by no means meet the increased expenses caused by war conditions.

In Cleveland four raises in the street car fare have been made since last autumn, and now the rate is 5 cents cash fare and 1 cent extra for transfers. According to the reports of Fielder Sanders, Street Railway Commissioner of the city, the present fare will not be sufficient to meet the expenses of the road.

In Tacoma a 3-mile extension had been made to the municipally-owned road, and the city government had to determine the rate of fare. It was found that the cost of operation and of the extension had been so great under war conditions that not even a 7-cent fare would meet the bill. The fare was placed at 10 cents. The municipally owned roads in Canada have met similar experiences.

Plainly the old order is passing. Service costs more, and more must be paid for it. Plainly, too, the taxpayer must share the burden. In the words of William L. Ransom, counsel of the Public Service Commission for the First District of New York, the public must realize "that whether the form of ownership and operation be public or private the public can have in transportation or public utility service, only what it is willing to pay for, and there is no way of getting something for nothing for the public from a public utility over any considerable period of time.

The Time Is Critical

It is quite apparent that the situation is really a crisis, for the campaigns against increase of fares are most bitter in the larger cities where most of the war work is being done. The integrity of our war program is seriously affected.

It is interesting to note the recent action taken in London, as described in detail elsewhere in this issue. After a long discussion the House of Commons decided that utility companies are entitled not only to their operating expenses—which the companies in this country are vainly seeking at the hands of the authorities—but that they are entitled to three-fourths of the average dividends paid before the war.

It should be noted here that the legislation in Massachusetts recognizes the right of the investor to a return upon his investment. This indeed is a feature of the service-at-cost plan wherever it has been put in operation. It is a feature of the Tayler ordinance in Cleveland. It is a hopeful sign. But service-at-cost legislation takes time. It cannot meet the present crisis.

The point I wish to emphasize is the necessity of the public and the public authorities recognizing that an emergency of the most critical character faces the service. Without a recognition of this fact the future of electric railways is full of peril not only to present investors but to business generally and to an essential part of our war program.

College Training in War Time

As a result of the passing of the man-power bill by Congress, and the consequent lowering of the draft age, all higher education of men in this country will be greatly affected. In fact, standard college courses are wiped out, and no college will operate this year except as a military training school. Men prepared for college will register as usual and will, as soon as arrangements are completed, be inducted into the army as privates, with private's pay and subsistence. Boys of twenty will stay in school three months; those of nineteen, six months, and those of eighteen one year.

New Single-Phase Locomotives for the Swiss Bundesbahn

The Author Describes Four Sample Locomotives Ordered for the Swiss Bundesbahn and Several Types Developed by the Oerlikon Company in Connection with This Electrification

By PROF. HUGO STUDER
Zurich, Switzerland

IN MAY, 1917, the management of the Swiss Bundesbahn ordered four sample locomotives for the Gotthard electrification. These have now been received and placed in service. It was the original intention to test these locomotives by operating them on the line between Scheraligen and Brig, but when the electrification of the line connecting Scheraligen and Bern was begun it was decided to use them, together with fourteen Loetschberg locomotives, to take care of the entire line between Bern and Brig, which is 72 miles long. The management of the Swiss Bundesbahn has now decided to order twenty more locomotives from three Swiss locomotive builders to be delivered the latter part of the year 1919 for service on the Gotthard line.

SAMPLE LOCOMOTIVES NOW IN SERVICE ON SWISS BUNDESBAHN

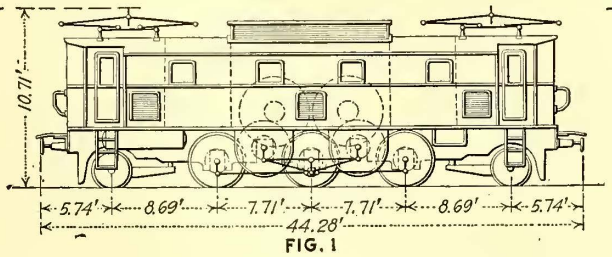


FIG. 1

Fig. 1—Small express locomotive type 1-C-1
Fig. 2—Large express locomotive type 1-BB-1
Fig. 3 — Freight locomotive type CC.

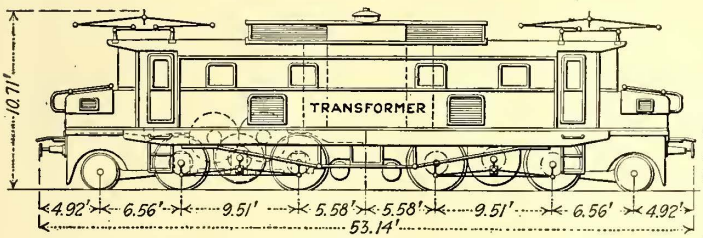


FIG. 2

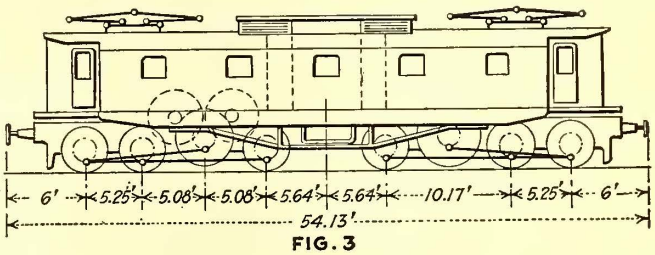


FIG. 3

The four test locomotives are of three types: One small express type, two large express types and one freight type. Under certain conditions these may be interchanged one for the other. The large express locomotives were intended for service between Lucern and Chiasso with a small express locomotive assisting on all grades of over 2.1 per cent. The maximum speed is 46.5 m.p.h. The service specified for the freight locomotive required making two round trips between Golden and Chiasso in twenty-four hours, with a trucking load of 950 tons (1,900,000 lb.), a second freight locomotive to be used to push on grades of more than 2.1 per cent. The permissible load on the driving axles is set at 39,600 lb. and on other axles 26,400 lb. minimum and 35,200 maximum. The maximum speed is 40.3 m.p.h.

The electrical equipment for the small express locomotive was built by the Oerlikon Company and the remaining parts by the Winterthur Locomotive & Machine Works. The type of construction is shown in Fig. 1. The locomotive being 44.28 ft. long, symmetrically constructed and similar in design to the large Loetschberg locomotives described in the ELECTRIC RAILWAY JOURNAL of Nov. 15, 1913, except that this locomotive has but three driving axles instead of the five used in the Loetschberg locomotives. Two single-phase series-type motors are provided, each having twelve poles and being rated at 125 hp. They are mounted on the middle of the locomotive frame, and the power is transmitted from them through spring-equipped gears to two jackshafts which transmit the power to the three driving axles by means of cranks and side rods. The electro-pneumatic reversing switches are mounted over the motors in a manner similar to the mounting in the large Loetschberg locomotives. Air-cooled transformers, together with the controllers, main switches, compressors, etc., are located at each end of the motors. The driver's cabs are located at the end. The normal drawbar pull for this locomotive is 19,580 lb. The normal speed is 31 m.p.h. and the maximum speed 46.5 m.p.h. The total weight including electrical equipment is approximately 100 tons.

LARGE EXPRESS LOCOMOTIVES ARE COUPLED TYPE

The electrical equipment for one of the large express locomotives was built by the Oerlikon Company and A. G. Brown, Boveri & Company supplied the equipment for the other. The mechanical parts were built by the Winterthur Locomotive & Machine Works. This

locomotive, type 1-BB-1, is shown in Fig. 2. It weighs 116.6 tons and 53.14 ft. long. The construction is similar to the type 1-C-1 locomotive just described, except that two trucks are provided and coupled together. Each part has two ten-pole motors of 560 hp. each. The motors are carried in the frame and are coupled together by means of spring-equipped gears and a jackshaft. The cab extends nearly the entire length of the locomotive, and the oil transformer, together with the control apparatus, is located in the center of the locomotive. The auxiliary apparatus, such as compressor and converter, is built into the ends, thus setting the driver's cabs back slightly from the front. The normal drawbar pull of this locomotive is 26,400 lb., with a maximum drawbar pull of 39,600 lb. The normal speed is 31 m.p.h. and maximum speed 46.5 m.p.h.

The control equipment for both locomotives is electro-pneumatically operated with twenty-three steps, thus providing smooth acceleration and close adjustment for normal running. By interlocking the control connections the number of taps from the transformer is reduced. The use of a single transformer simplifies the electrical connections, but the body construction must be made heavier to carry the weight at one point.

As shown in Fig. 3 the freight locomotive is 54.13 ft. long. It was built by A. G. Brown, Boveri & Company and the Winterthur Locomotive Works. It has three axles and is of the coupled type. Each truck has two motors mounted between the second and third axles from the ends. These are coupled together by means of spring-equipped gears, and a jackshaft transmits the power to the wheels through side rods. The driving arrangement is similar to one of the first Loetschberg locomotives except that two motors are used for each part instead of one. The drawbar pull of this locomotive is approximately 35,200 lb., and the maximum 52,800 lb. The normal speed is 23.32 m.p.h. and the maximum speed 40.3 m.p.h. The weight is approximately 246,400 lb.

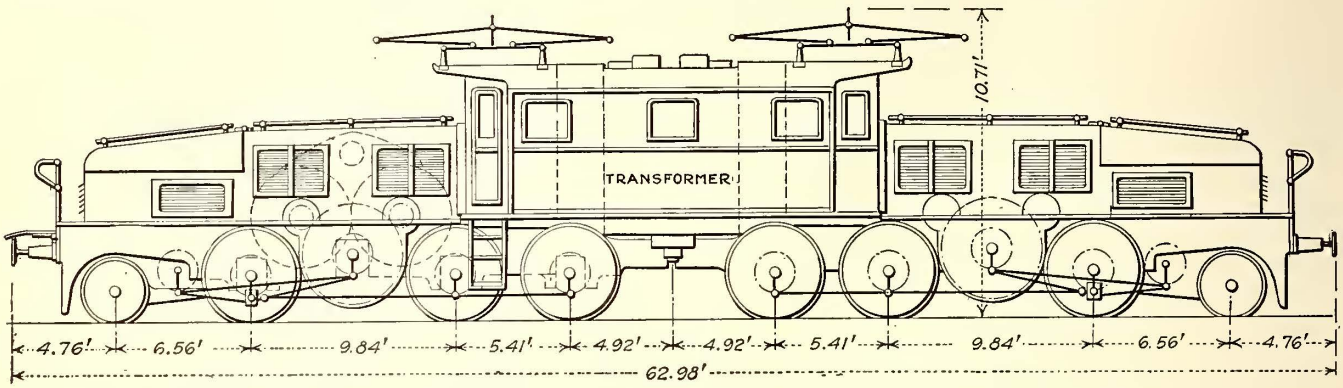


FIG. 4—NEW TYPE FREIGHT LOCOMOTIVE RECENTLY ORDERED FOR SERVICE ON THE GOTTHARD LINE

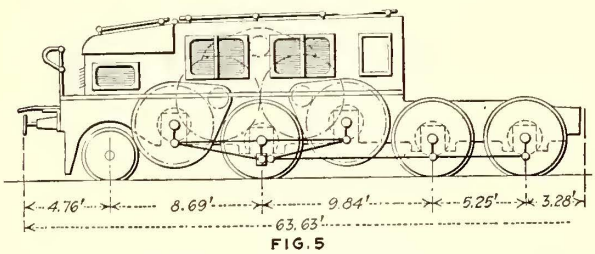


FIG. 5

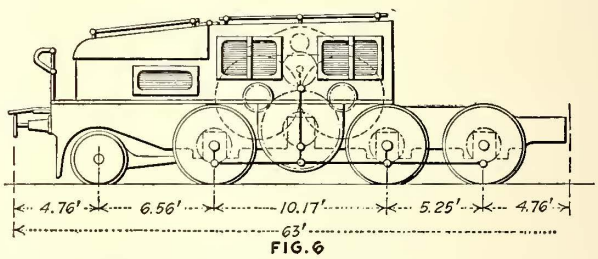


FIG. 6

FIG. 5—LOETSCHBERG LOCOMOTIVE EQUIPPED WITH A TRIANGLE ARRANGEMENT OF SIDE RODS. FIG. 6—LOCOMOTIVE EQUIPPED WITH VERTICAL SIDE RODS

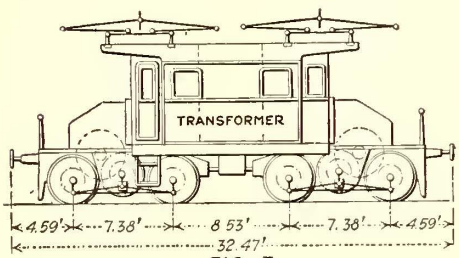


FIG. 7

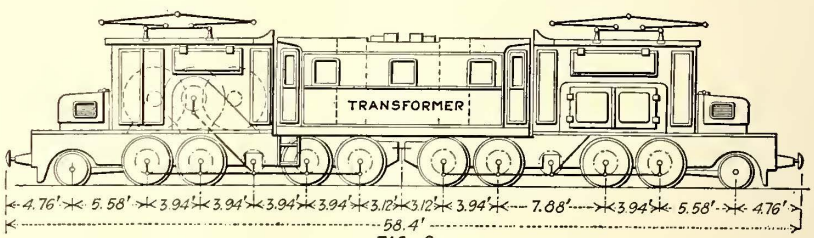


FIG. 8

FIG. 7—SMALL LOCOMOTIVE FOR LIGHT WORK ON BRANCH LINES. FIG. 8—LOCOMOTIVE WITH THREE PART CAB CONSTRUCTION ESPECIALLY ADAPTED TO NARROW GAUGE RAILROADS

OERLIKON COMPANY'S NEW TYPE LOCOMOTIVES

The last order for twenty locomotives is to be made up of ten large express locomotives, as shown in Fig. 3, to be built by A. G. Brown, Boveri & Company and the Winterthur Locomotive Works, and ten freight locomotives of a new type developed by the Oerlikon Company and the Winterthur Locomotive Works, as shown in Fig. 4.

In designing the Loetschberg locomotives duplicate equipment was provided throughout so that the equip-

ment could be operated in limited service with half of it disabled. This resulted in a comparatively long locomotive having a long wheelbase and being relatively heavy and expensive. This procedure was justified in the Loetschberg locomotives as they were more or less of an experiment, but practice has shown that the necessity for duplicating equipment does not exist. If only one transformer is to be used there is but one logical place to put it, and that is in the middle of the locomotive. This requires a heavy locomotive body since the main load is in the middle.

The development of such a type of locomotive by the Oerlikon Company has resulted in a machine with two trucks directly coupled together. The driving motors and other equipment are mounted on the outside of the central cab between the second and third axles. These parts in general are covered with low housings. Running boards are provided on either side of the housings for the use of the operators in getting into and out of the locomotives. The locomotive cab proper could thus be made very short, extending only one-third of the total length of the locomotive. The main circuit breaker and transformer are mounted in the middle of the cab with the control apparatus located on each side of the transformer so that the connections to the transformer are extremely short. The transformer and the cover of the main circuit breaker form a part of the cab roof, so that no special bushings or insulating devices are required to bring the high-tension leads inside the locomotive.

This arrangement has a further advantage in that the driver is not right at the front of the locomotive while operating. This gives him a feeling of safety which will tend to keep him at his post and in command of all safety devices when in danger, and the low construction at the ends insures non-interference with his view of the track ahead. This location also is near the control apparatus so that should multiple-unit operation fail for any reason a simple manual operation of the apparatus can be resorted to. A great advantage of this arrangement of apparatus is the facility provided for the removal of the motors and the relatively short and light central cab.

When the jackshaft cannot be located on the same level as the driving axles, various driving arrangements are possible. The lightest construction used is that of the first Loetschberg locomotive and in the CC test locomotive shown in Fig. 3, which is equipped with inclined side rods. The triangle arrangement shown in Fig. 5 was used on the large Loetschberg locomotives. Still another method of accomplishing the same purpose is shown in Fig. 6, where a vertical side rod is used.

On the recommendation of the Winterthur Locomotive Works an inclined side rod with auxiliary jackshaft was chosen for the ten freight locomotives being constructed. The gear ratio of these ten locomotives is 1 to 4. The normal rating of four motors is 2100 hp. at the driving wheels. The weight of the electrical equipment is 116,600 lb. and the mechanical parts 156,200 lb.

The locomotive shown in Fig. 7 is a smaller type having a rating of 660 hp. with from 13,200 lb. to 19,800 lb. drawbar pull and a maximum speed of 27.9 m.p.h. This locomotive is suitable for light work on branch lines, suburban traffic, etc.

Fig. 8 shows a three-part cab construction especially adapted to a narrow-gage railroad. In this case, on account of lack of room, the motors extend practically to the height of the roof and the front housings shut off some of the view of the engineer. However, he can see even better than on steam locomotives, due to the better arrangement of the equipment.

Houston Adopts Telephone Dispatching

How the Dispatchers in Texan City Control Car Movements and Receive Reports of Delays, Accidents and Defects

DURING the last week of May, the Houston (Tex.) Electric Company installed a telephone dispatching system with forty-two stations centering at the company's office. Among the results secured was the elimination of the hand-written check of car headways at Main and Congress Streets, one of the more important intersections.

During the course of the day three dispatchers handle the board under the direct control of the superintendent of transportation. He is the officer of the day responsible for all car movement. Road inspectors report directly to him for instructions.

Each of the three dispatchers has an eight-hour trick. The morning trick is 7 a.m. to 3 p.m.; the afternoon trick, from 3 p.m. to 11 p.m., and the night trick from 11 p.m. to 7 a.m. The night man checks cars into the carhouse, figures mileage, prepares the sheet for the following day, and books cars and crews for the following morning. The tricks are changed sufficiently to give one man a twelve-hour trick for two successive Sundays and then let him be off duty for a complete twenty-four hours.

As each starter sends out cars he gives the dispatcher the run number, the car number, the names of the crew and the leaving time. The crew telephones its car number to the dispatcher from each end of crosstown lines and from the suburban end of other lines. To get the dispatcher it is necessary only to take the receiver off the hook, the dispatcher answering by giving the time the car is due at the box. If the car is off-time he will give the necessary instructions. If because of rerouting or some other change the regular boxes are not available, the men use others designated by the dispatcher. When a crew pulls into a carhouse, it reports to the dispatcher as at the end of the line.

If a car is off schedule because of delay, the crew reports to the dispatcher the cause and the duration of such delay. At present the crew continues to make out a written delay card as heretofore. This card is turned in to the belt inspector at Main and Congress Streets or the interurban office as soon as the crew passes either point.

To order an ambulance or otherwise arrange to care for some case of personal injury, the crews use the nearest outside telephone. Minor accidents are reported at the nearest private station as follows: Line, car number, conductor, motorman, time, place, name and address of person injured or owner of property damaged, and nature of accident.

The belt inspector at Main and Congress Streets and the agent at the interurban station have an emergency supply of transfers. Only the belt inspector has an emergency supply of half-fare tickets. No change-making facilities, however, are supplied.

News of track, line and car defects, when reported to the dispatcher, is immediately passed on to the proper authorities. Crews are instructed to report on defective cars from the end of the line, whenever possible, so that the dispatcher will have the opportunity to order a change of cars.

The dispatcher does not directly handle complaints and lost-article inquiries, but he refers the speaker to the number of another official who handles such matters.

Duluth Has Women Car and Shop Workers

Seventy-five Are Now Employed—Separate Restaurant and Carhouse Accommodations—Specifications for Uniform Are Published

IN ADDITION to thirteen women car cleaners the Duluth Street Railway now has seventy-five women conductors, the inevitable result of operation in a busy war-work community. Nothing could be more significant of the need than the fact that 90 per cent of the men who have left the company during the last year went to the shipyards and that forty men out of 300 left in the single month of June. At the end of the month the company was short fifty men.

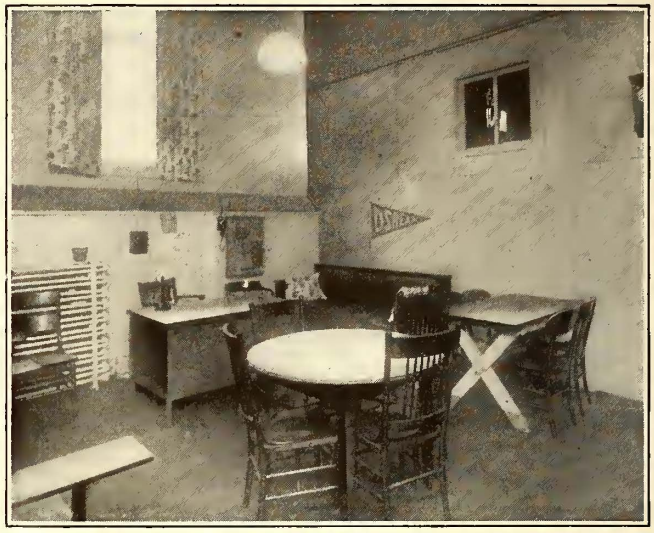
The women conductors are employed at exactly the same rates as the men, namely, 10 cents an hour while learning and 32 cents an hour from the time they are on regular duty. Their runs do not differ materially

DINING ROOM FOR WOMEN; DORMITORIES AT BACK

from those of the men, the common practice being one-piece runs with a fall-back or layover for lunch. Many prefer night runs.

These women average a high order of intelligence. About one-third are former waitresses who are skilled in handling people politely and accustomed to standing; some have come from factories; four or five are the wives of motormen but do not work on the same cars, and quite a large number are school teachers who have entered the service since the close of the school term. It is expected that many of the teachers, for whom this means a neat increase in earnings, will stick to the car instead of returning to the schoolroom.

For trial uniforms, the company adopted a loose blue coat and cap similar to that worn by the men. It also considered khaki and puttees as used by the New York Railways, but concluded that khaki was too light for the severe Duluth winters. It felt that whatever uniform was adopted should be natty and striking, for the public would expect something out of the ordinary when women became conductors. Therefore, neither the orig-



A CORNER OF THE WOMEN'S REST ROOM IN EMPLOYEES' QUARTERS

inal baggy outlines, nor a suit that would have to be covered up in winter, would serve.

The uniform adopted later is of blue cloth, close-fitting tailor-made, with face and side pockets. The cap is higher and the visor is shorter than before to secure a less masculine appearance. The specifications for the uniform also declare that the shoes must be at least 9 in. high and that shoe and skirt must meet. The complete uniform costs $26 to $27 and may be paid for within sixty days.

A matron is in charge of all women employees. A handsome rest room has been fitted up for them at the Superior Street headquarters in Duluth. In addition, there are three rooms with cots for which a charge of 10 cents is made if used over-night for sleeping, with change of linen; otherwise, as in the case of the men's rooms, the cots have a covering on which naps may be taken without any charge. Like the men, also, each woman has a private metal locker. A cut in a division wall has been made to give them service from the restaurant which has been maintained for years by an outside caterer. The company furnishes quarters and electricity free. The women preferred this arrangement rather than to go into the men's restaurant. Provision has been made at several private places for toilets for women conductors where the company could not install them itself.

For the men there has long been provided a separate clubroom with shower baths, pool tables and other comforts. This includes a reading room with weekly and monthly periodicals paid for by the company.

Selling Transportation on a Commercial Basis

The Rules Do Not Vary Greatly from Those in Other Lines of Business — Public Must Know What It Is Purchasing in Order to Be Satisfied

By CLARENCE RENSHAW
General Engineer, Westinghouse Electric & Manufacturing Company

WHEN any commodity is sold by the pound, the yard, the dozen, etc., these units express the obligation of the seller and the rights of the buyer in a definite, quantitative way. The former in stating his price expresses his obligations toward his customer, while the latter, after hearing it, knows exactly what is coming to him for a given sum of money. What is perhaps of even more importance in such a transaction, the purchaser can readily assure himself that he has received full value, or that he is short by a concrete amount. In the latter case his complaint can be readily adjusted.

It is a comparatively easy matter for a merchant who deals with his customers on such a basis to be always on good terms with them. Conversely, it is essential that there should be some definite understanding of mutual obligations between seller and buyer, in order that such relations may prevail. One of the greatest weaknesses in the relations between the electric railways and the public has been that heretofore this fact has not been fully appreciated. The railways have made strenuous efforts to convince the people that the price of their product was too low, but seldom, if ever, has any company attempted to describe exactly what it was giving for the fare received. The people, on their part, have felt that the railway companies owed them good service, and in the absence of any definition as to what good service is, they have always claimed they were not getting it.

Everyone recognizes that in a store conditions must be right or the business cannot be profitable. The surroundings must be attractive and the clerks polite. The prospective customers must be told what goods are for sale and what the prices are. The goods must be of a quality commensurate with the price. The patrons must be made to feel that their trade is appreciated and that they receive fair value for their money. Unless these things are done, the people will go elsewhere to make their purchases. There are always other stores.

Sale Methods Apply to Electric Railways

Although it is not generally recognized, these principles hold equally well with regard to electric railways. True, the conditions are apparently different. A railway has a monopoly. The people must have transportation and the railway affords the only means by which they can obtain it economically. There is no recourse. The store (*i.e.*, the cars) may be dirty and out of repair. The clerks (*i.e.*, the motormen and conductors) may be impolite and unobliging. No effort may be made to tell the people what is for sale (*i.e.*, where the cars go and when), or what the price is (*i.e.*, fare, transfer privileges, etc.). The quality of the goods may be poor (*i.e.*, cars slow, infrequent and crowded). Since there is no competitor to patronize, however, the people must continue to ride anyway and must be pleased with whatever the railway gives them. So why spend money on "commercial methods" or why commit one's self to any definite "standard of service"?

Here is the reason. We were wrong on one point. The people may have to take what the railway gives them, but they do not have to be *pleased* with it. Moreover, when one's customers are not pleased, monopoly, or no monopoly, it is only a matter of time until the business fails. There is another reason. An old proverb says, "Give a dog a bad name and you might as well hang him." For the same reason it isn't necessary for a railway company actually to be derelict in any or all of the above respects for the public to fail to be pleased. Its car service may be the best in the world, but if the public thinks it is poor the result will be practically the same as if the car service actually is poor.

The adoption of commercial methods by a railway company would not necessarily mean that any change would be made in the quality of the car service. What it would mean is that the public would be informed as to the service which the company believed was due it and was trying to give it. If a person gives you short change and you are convinced that it was not intentional, you do not hold the incident against him. If you have reason to feel that he was deliberately trying to cheat you, however, his reputation is gone. So, when a person or a corporation boldly announces that it believes a certain course is right and then proceeds to follow that course, there is usually little criticism. Let us consider a typical case.

Difference Between Running Cars and Giving Service

In the absence of any information to the contrary, people usually expect to get a car within a few minutes of any time they get to the corner. If a man has to wait fifteen minutes, therefore, he naturally feels that the service is poor. If he knows, however, that the cars on that line are only supposed to run every twenty minutes, and if he also knows that he cannot expect one until such and such a definite time and if when the car comes he finds by his watch it is exactly on time, his attitude is then entirely different. Under these conditions instead of feeling, on account of his fifteen-minute wait, that the service is poor, he feels that it is good because the car is on time.

It is obvious, therefore, that two people waiting on the same corner for the same car may form exactly opposite ideas of the railway company. One, not knowing the basis on which the cars are supposed to operate and judging by an imaginary standard, may feel that the

company is very lax. The other, knowing exactly what the company has obligated itself to do and finding that it is meeting this obligation to the letter, will feel that it is conscientious and business-like.

Nor is this example a mere hypothetical case. Several times in different cities, where I was studying the railway service and hence was provided with this information, I have been one of two such parties and I have heard the other party express himself. Moreover, the widely different opinions of the railway company which the two parties formulate in such cases are entirely justified, for although the *car* service given to each is exactly the same, the *service* (a much broader term) has been widely different. The one who knows when the car is due has been given good service; naturally he is pleased. The other, who has had no opportunity to learn this, has not been given the treatment to which I consider he is entitled. One manager told me that the people on his lines always found out from the crews what time the cars left. Fine!—but imagine a department store whose bargain sales were patronized only by the people who had learned the particulars by asking the clerks.

To my mind the above indicates the cause of the trouble from which most of our city railways are suffering. What they regard as their principal duty is to run cars, while what the people want is service. It is, of course, necessary to have cars and to run them, but in many cases I believe that comparatively little invested in the right kind of service would do more good with the public than many times the same sum devoted merely to increasing the number of cars.

Some Requisites for Good Service

One of the first requisites in selling transportation service is a suitable map of the system in the hands of each citizen. It is much easier to persuade a person to ride on the cars if he knows where they go than it is if he is always fearful of losing his way. Nor will any old map do. It must be sufficiently small for convenience and yet large enough to be clear and distinct and to allow one route to be distinguished from another. An enlarged view of the downtown district in the corner or on the back will often help solve the problem.

The map should be supplemented by a route sheet so that general locations obtained from the map can be followed in details as to streets, where desired. Both map and route sheet should describe the designation of the cars, so that one can easily find the car for any route or the route of any car.

Fares, reduced-rate tickets, transfer points, zone points, methods of fare collection, etc., should also be described. Anyone planning a trip on an unaccustomed line should be able to inform himself in advance as to all these points. Most people are more or less sensitive. They hate to show their ignorance of these matters by asking about them, especially as conductors are sometimes neither clear nor gracious in their replies. People especially hate to be penalized by paying single-fare rates when they might have purchased reduced-rate tickets, or by riding a block beyond a fare zone and having to pay a second fare, when they might have gotten out and walked. Night fares, if different, should also be covered with a clear statement of the hours during which they are in effect.

Time points, headways and running times are likewise important. One is a much better potential purchaser of transportation from the local railway of his city if he is properly informed on these subjects, because he is better prepared to use the commodity which the railway has to sell instead of employing an automobile or walking. I once knew of a salesman for a manufacturing company who hired an auto to call on the master mechanic of the railway company in a certain city, because of an exaggerated idea of the time required to get to the shops on the cars.

Finally, matters of policy should be dealt with. The number of cars operated on any given line at different times of the day is usually arranged so that in the rush hours no car need carry more than a certain maximum, and so that in non-rush hours the interval between cars will not be too great for reasonable convenience. These and other fundamental principles of railway operation are perfectly legitimate and straightforward, and if openly acknowledged in the right way would do much to prevent dissatisfaction.

"Good Service" Needs Definition

There are, of course, many other items which will suggest themselves, if the idea of doing business on a commercial basis and treating the people like customers is once established. The foregoing, however, should be sufficient for illustrative purposes. The point I wish to make is, that to my mind the fundamental reason why the public is so generally dissatisfied with the electric railways is not so much because of the car service which they give, as it is because of the usual lack of the broader service to which I have referred. The railways have always hesitated to define what they considered reasonable service or to formulate their obligations to the public in a definite way, for fear that some day this might embarrass them. The public, on the other hand, with no statement or standard to guide it, has always taken the stand that no matter what service the electric railway may be giving, it is not as good as it should be.

This, then, leads to the idea one hears expressed so frequently by the statement, "I wouldn't mind paying an increased fare if the railway company would only give the proper service." This statement is entirely honest and the railway companies should take advantage of it. In doing this, however, I believe they will surely find that while the speaker himself may not know it, the "proper service" for which he yearns consists not merely of more cars but of the application of the same commercial methods that are employed in selling other commodities.

Federal Registration of Engineers

The Division of Engineering, United States Employment Office, Department of Labor, has prepared a government classification form for engineers. The director of engineering, A. H. Krom, urges every engineer to fill in one of these forms, which can be secured from local United States Employment Service offices or from the office of the division, 29 South LaSalle Street, Chicago, Ill. With full information as to the resources of the country in the way of trained engineers, the division will be able to recommend qualified men for vacancies in the field.

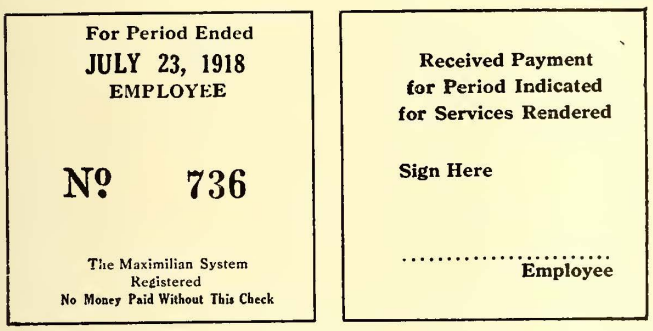
Employees' Pay Checks

Electric Railway Auditor Devises System for Financial Protection and Time-Saving

THE "Maximilian" system of pay checks for employees is said by the patentee, A. M. Lewis, auditor Elmira Water, Light & Railroad Company, Elmira, N. Y., to have distinct advantages over similar systems now in use. It prevents fraud, protects the employer, saves considerable time on the part of all concerned and acts as an identification of employees. The basis of the system is a 2-in. x 2-in. pay check, such as is shown in the accompanying illustration.

In the operation of the system, the timekeepers, the department heads or the superintendents place the names of employees on the payrolls in the proper numerical order, using the series numbers pertaining to the various departments. For instance, pay checks No. 1—300 might be for conductors and motormen, 301—400 for track employees, 401—450 for carhouse and shop employees, 451—500 for power-plant employees and so on.

The accounting department checks the payrolls and turns over pay checks corresponding to the numbers listed. When these checks are received by the superintendents or other officials, they are distributed to the men and presented by them at the paymaster's office. The number and the name signed by the employee on the pay check receipt must correspond with those on the payroll.



SPECIMEN OF EMPLOYEES' PAY CHECKS

The accounting department checks the payrolls with the pay checks three days after payment. This three-day period is allowed for stragglers or men temporarily away, and it reduces to a minimum the entries to the "Unclaimed Wages" account. For every number on the payroll for which there is no corresponding receipted pay check, the paymaster must produce the amount of money listed. It is obvious that the paymaster cannot withhold any money due to employees or convert any, even temporarily, to his own use.

The colors of the checks are changed weekly, so that the presentation of a check not having the current color indicates a claim upon the "Unclaimed Wages" account. If the check is properly listed therein, it is honored for payment. Lost pay checks must be reported to the accounting department, which will make a notation on the payroll affected and issue a duplicate check. The lost check, if later presented, is taken up by the paymaster and the general manager's attention drawn to the fact.

The employees are paid in cash, counted out in full sight by the paymaster. This procedure obviates the necessity of doing up the money in envelopes and avoids disputes over the correctness of the payment. It also eliminates the writing of bank checks and the balancing of bank accounts and outstanding checks. If there is any error in the amount due, the matter is referred to the accounting department for adjustment.

In Mr. Lewis' opinion, the system is particularly desirable by reason of its flexibility, as the series of numbers applying to any particular department can be increased or decreased at will according to the number of employees. The system will work out satisfactorily for hundreds or thousands of employees. The cost of printing, cutting and tying-up tickets by weeks is said to be nominal.

The system is at present used by the Elmira Water, Light & Railway Company, which employs approximately 750 people. It is also in use at the five factories of the Electric Hose & Rubber Company, Wilmington, Del.

Buses Abandoned in Havana

Operation of Electric Buses in Cuban Capital Not Profitable—Receipts for Ten-Month Period Show Deficit of $281

THE last report of the Havana Electric Railway, Light & Power Company gives an interesting account of the experiment made with electric omnibuses as auxiliaries by that company and their final abandonment after a trial of about ten months. The company has always operated a certain number of stage lines, but as the earnings of these lines became smaller and the cost of feeding the mules had increased greatly, it was decided early in 1916 to make a trial of electric motor omnibuses as auxiliaries to the railway. They were intended to serve districts where the railway could not operate because of the narrowness of the streets and others in which the population was not dense enough to warrant railway construction. An attempt to operate gasoline omnibuses of European type made in 1914 had failed because of the high cost of fuel and popular dislike, the vehicles being far from comfortable.

Twelve electric buses were purchased, six for twenty-two passengers and six for twelve passengers, and put on two routes. Each bus averaged about 90 miles a day which required three battery charges. The fare was 5 cents with no transfers. At the beginning the average receipts per bus-mile were a little more than 12 cents, but this fell slightly during the summer, and the average for the total period of operation, which ended Oct. 15, 1917, was 10.66 cents per bus-mile. The buses were finally abandoned owing to the high cost of maintenance. During the ten and a half months that the trial continued, 222,894 bus-miles were operated. The gross receipts were $24,185.20 and the total expense of operation and maintenance was $24,466.31.

The buses have been rebuilt for use in various departments of the company so that the investment in them has not been a loss.

Since the spring the Tacoma Railway & Power Company has been employing women as car washers and for grinding but not testing of air-brake valves, etc. The proportion of female clerks has also been increased.

British Fares to Be Raised

House of Commons Passes Bill Permitting Fares Sufficient to Pay Dividends at Three-Fourths of Pre-War Rates

DIVIDENDS at not to exceed three-quarters of the pre-war rates may be paid by British tramways during the war and for two years afterward. This is the result of the recent passage of a bill by the House of Commons providing for increases in the maximum charges under statutory regulation. The bill is the result of two years of petitioning on the part of the Tramways and Light Railways Association and the Municipal Tramways Association.

The bill is yet to be considered by the House of Lords. The relief will probably come so late that the tramways will derive little advantage from it this summer. In the meantime the various undertakings will have opportunities to prepare the individual cases for presentation to the Board of Trade, whose approval is required for increased fares. The proviso that in the case of municipal tramways there may be an increase in the statutory maxima, in order to avoid loss, of as much as 50 per cent should remove from many such lines the imminent danger of recourse to the taxing power.

In commenting upon the measure the *Tramway and Railway World* says:

"As originally proposed utilities were to be authorized to make such charges as would enable them to pay dividends not exceeding one-half of the pre-war rate. After a long discussion, which dealt mainly with the position of the gas companies, the bill was amended in committee, making the dividend rate three-quarters instead of one-half of the pre-war rate. Though the position of tramway owners under the bill is considerably less favorable than that of steam railroad shareholders, the new arrangement must be regarded as not unsatisfactory.

"Whatever may be the case in regard to the other statutory undertakings, there can be no question of the justice of the arrangements so far as tramways are concerned. These undertakings have been dealt with somewhat arbitrarily by the government; their services have been reduced, the wages of the employees have been repeatedly increased by awards by the committee of production, and it is no secret that these awards have been given in some cases not on the merits of the case but because the government stood committed to increases in other industries. If the tramway undertakings, which are essential to the manufacture of munitions, were to be carried on, it was necessary that they should be in a position to cover part at least of their increasing expenses."

The text of the new bill is as follows:

1. (i.) Where it appears to the appropriate government department that the financial position of any undertaking to which this act applies has been adversely affected by circumstances arising out of the present war, the department may, if they think fit, by order provide for the modification of any statutory provisions regulating the charges to be made by the undertakers, and of any statutory provisions consequential on or supplemental to any such provisions as aforesaid, for such period during the continuance of this act, in such manner, and subject to such conditions, as appear to the department to be just and reasonable:

Provided that—

(a) where the undertakers are a local authority no modification shall be authorized which will increase the statutory maximum charge by more than 50 per cent, or which is more than sufficient so far as can be estimated to enable the undertaking to be carried on without loss; and

(b) In any other case no modification shall be authorized which is more than sufficient to enable with due care and management a dividend on the ordinary stock or shares of the undertaking to be paid at three-quarters the standard or maximum rate of dividend, if any, prescribed for the undertaking, or at three-quarters the pre-war rate of dividend, whichever is lower.

(ii.) An application to a department for the purposes of this act shall be accompanied by such information, certified in such manner as the department may require with respect to the financial position of the undertaking in question, and before making an order the appropriate government department shall require the undertakers to give public notice of the application for an order under this act, and as to the manner in which and time within which representations may be made, and to give a similar notice to the council of each county, borough, or urban, or rural district within which any part of the undertaking or limits of supply of the undertaking is situate, and the department shall consider any representations which may be duly made.

(iii.) The undertakings to which this act applies are tramway undertakings, including light railways constructed wholly or mainly on public roads, and undertakings for the supply of gas, water and electricity, and in calculating the maximum charge which may be authorized under this act in respect of such tramway undertakings fractions of one halfpenny shall be calculated as one halfpenny.

(iv.) For the purposes of this act—

The expression "statutory provisions" includes the provisions of any order having the force of an act;

The expression "appropriate government department" means, in relation to gas and water undertakings carried on by local authorities, the Local Government Board, and in relation to other undertakings the Board of Trade;

The expression "local authority" includes any commissioners, trustees, or other public body of persons carrying on, otherwise than for purposes of private profit, any undertaking to which this act applies.

The expression "pre-war rate of dividend" means the average rate of dividend for the three financial years immediately preceding the war.

2. In the application of this act to Scotland the Secretary for Scotland, and in the application of this act to Ireland the Local Government Board for Ireland, shall be substituted for the Local Government Board.

3. (i.) This act may be cited as the statutory undertakings (temporary increase of charges) act, 1918.

(ii.) This act shall have effect during the continuance of the present war and for a period of two years thereafter and no longer.

Payrolls Jump High

Calculated Results of Several Recent Awards of War Labor Board Show 21 to 70 per Cent Increases

INCREASES in payroll of from 21 to 70 per cent seem to be the outcome of the recent wage awards by the National War Labor Board. While complete data are not yet available, statistics for some of the score and more of electric railways whose wage cases have been decided by the board are sufficient to indicate the serious nature of the added drain upon operating revenues.

The following table gives the total payroll of employees affected by the wage awards for the year ended June 30, 1918, together with the same payroll after the application of the new wage rates:

	Payroll for Year Ended June 30, 1918	Payroll Under New Wage Rates	Per Cent of Increase
Galesburg Railway, Lighting & Power Company	$49,392	$76,365	55
Joplin & Pittsburgh Railway	*	.....	70
East St. Louis & Suburban Railway	580,000	780,000	35
New York State Railways	3,304,473	4,733,051	43
Pennsylvania-New Jersey Railway	155,460	214,674	38
Cleveland, Southwestern & Columbus Railway	†(a) 160,827 †(b) 24,314	210,601 56,989	31 131
Omaha & Council Bluffs Street Railway	1,151,829	1,401,829	21
Cleveland & Eastern Traction Company	‡ 2,263	2,736	21

* Year ended June 30, 1917.
† Year ended April 30, 1918.
‡ Month of May, 1918.
(a) Payroll for train employees. (b) Payroll for substation attendants.

It should be observed, regarding the Cleveland & Eastern Traction Company, that the trainmen work from three to four and one-half hours out of nine on the lines of the Cleveland Railway at the latter's expense. When on their own line the men receive under the average hourly wage scale, 38 cents for the first three months, 40 cents for the balance of the first year and 42 cents thereafter, while on the city lines they receive for the first year 43 cents and 48 cents thereafter. Thus

the increase in payroll for the Cleveland & Eastern Traction Company is not what it would be if this company had to pay its men for their entire day's work.

The figures given for the Omaha & Council Bluffs Street Railway do not represent the entire current increase in the payroll, for the reason that the company voluntarily increased the rates of all employees on Jan. 1, May 1 and June 1, 1918. The total payroll for all employees for the year ended June 30, 1918, was $1,247,829. The same payroll showing the new War Labor Board rates for the employees affected would total $1,820,673, an increase of 45.9 per cent.

Higher Than Steam Railroad Wage Rates

The fact that the wage rates authorized for employees other than motormen and conductors are excessive in view of near-by steam railroad rates has been brought out in protests made by the Scranton and Chicago lines. Under the Scranton award track labor will be paid 42½ cents an hour, whereas track labor on the steam railroads operating in the same territory under orders of the Director General of Railroads receives 32½ cents an hour. Car cleaners will receive 42½ cents an hour as compared to a maximum of 37 cents an hour upon steam roads. Janitors will receive 42½ cents an hour as compared to 30 cents an hour on steam roads. Watchmen will receive $153 a month as compared to $71.50 a month on the steam roads—a greater compensation than track foremen. Ordinary labor will receive 42½ cents an hour as compared to 32½ cents an hour upon steam roads. Thus unskilled labor will receive practically the same wage as semi-skilled labor in the carhouses and shops.

The Chicago provision that all employees other than trainmen shall receive practically a minimum of 42 cents an hour will, it is said, produce an excessive wage resulting in confusion and discontent among the men and a great disparity with the near-by steam railroad wages. The Chicago electric railways have joint employees, for example, with the Baltimore & Ohio Railroad. The rate of the Director General of Railroads for gatemen is about $65 a month, but under the War Labor Board award the electric railway employees of this class will receive $150 a month. Similarly, steam railroad track men will receive 32½ cents an hour, but such electric railway employees 42 cents an hour. Electric railway colored porters, now getting about $65 a month will, because of building fires in the morning and banking them at night, be raised to about $150 a month by a twelve-hour shift. This wage is also that received by the most skillful employees, the motormen.

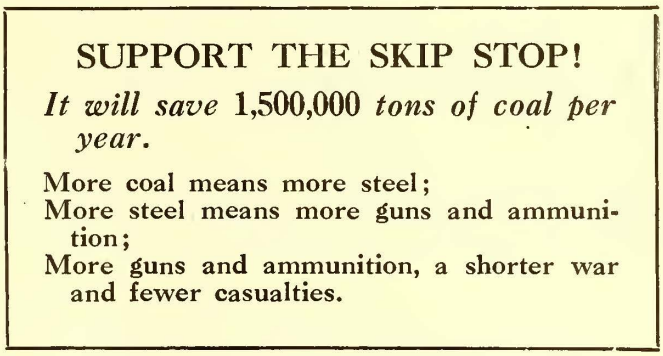
Owing to many changes in schedules and working force during the last year, and the difference in percentages of increase for old and for new men, the Evanston Railway has not determined the effect of its wage award upon the 1917 payroll figures. Taking its regular schedule and shoptime, however, it calculates an increase of $9,460 for twelve months and an increase of $426 for extra shopmen for four months during the winter painting season—a total of $9,886. This does not include others whose pay will have to be increased because of the award to trainmen and shop employees. The percentage of increase for individual classes of employees runs from 15½ to 77 per cent, the car washer with $55.50 additional getting the largest increase.

Skip Stops Will Save 1,500,000 Tons of Coal Annually

United States Fuel Administration This Week Issued Request for Widespread Co-operation in Reduction of Power Waste

AS A WAR measure the United States Fuel Administration anticipates that by Sept. 15 the skip-stop system will be in general use throughout the country, effecting a saving at the rate of 1,500,000 tons per annum. Suggestions and instructions have been sent to the Electric Railway War Board, councilmen, mayors, public service and city commissioners, and electric railway officials in all cities of 25,000 population and more. The administration desires that this plan be adopted through voluntary co-operation of the public, municipal authorities and electric railway officials.

Posters containing the lettering shown herewith will be issued by the administration.



SKIP-STOP POSTER OF UNITED STATES FUEL ADMINISTRATION

Before the skip-stop system is started in each city the administration suggests that a board consisting of five members be selected; two representing the city, two the railway and the fifth the Fuel Administration. The city members should obtain the views of the police and fire departments regarding dangerous points of traffic, providing they exist. The duty of this board is to select the car stops and see that instructions regarding the stop marking, advertising and general policy are carried out to the end that the public may be given the best service with maximum fuel economy.

The Fuel Administration has requested that there be not more than eight stops per mile (average 660 ft. apart) in business districts; six stops per mile (880 ft. apart) in residence districts; and four stops per mile (1320 ft. apart) in open country.

All mayors and others in authority are urged to have ordinances passed to keep vehicles off car tracks and keep the tracks clean of obstructions. In this way traffic will be accelerated, much time saved for the community, and power waste reduced. The administration asks also that the railways and the city authorities make every effort to eliminate stops of cars going up hill and around curves. Municipal authorities are urged to do everything they can to reduce the number of stops made by the interurban cars, especially within city limits.

The Fuel Administration states that, already in operation in Chicago, Detroit, Washington, Minneapolis, Brooklyn and many other leading cities, the skip stop is effecting an annual saving of 500,000 tons of coal.

Keeping the Men on the Job

The Houston Company, With Clubhouse, Cafe and Co-operative Association, Shows That the Best Is None Too Good for Employees

WHILE trainmen naturally want all the wages they can get, the size of their pay envelope is not the only or even the biggest inducement to keep them on the job. Human and humane interest in their personal comfort counts for a great deal if that interest is displayed whole-heartedly by the management and not perfunctorily by a clerk.

In the work done along these lines by the Houston (Tex.) Electric Company the first principle is that the best is none too good for the tired platform man. For example, the clubhouse built for the employees has the usual pool tables, games, shower baths, wrestling mat, punching bag, boxing ring, moving picture machine and the like. In the very essential matter of toilet facilities, however, it shows a significant improvement over other so-called clubhouses where the toilets would disgrace a sty. The Houston company believes that men are silently bettered by their environment and that they will take care of facilities when told that these are to be treated as their own personal property. Results speak for themselves; the first-class porcelain and metal fixtures, installed at considerable expense, are treated as if they were appreciated.

"At-Cost" Café a Success

More recently the company has further added to the comfort of the men by installing at the Milby clubhouse an "at-cost" café, open from 7 p.m. to 7 a.m. The café was opened on March 8. That it was a huge success is evident from the fact that a neighboring innkeeper, who had been supplying poor food at high prices, soon shut up shop.

The café is on the ground floor of the clubhouse, covering about 400 sq.ft. The men are served at a

TRAINMEN'S CLUBHOUSE AT HOUSTON, TEXAS

counter. The equipment consists of a gas stove, a refrigerator with 200-lb. ice capacity, a 3-gal. coffee urn, a 10-gal. water cooler, two metal sinks with hot and cold water, dishes and cooking utensils.

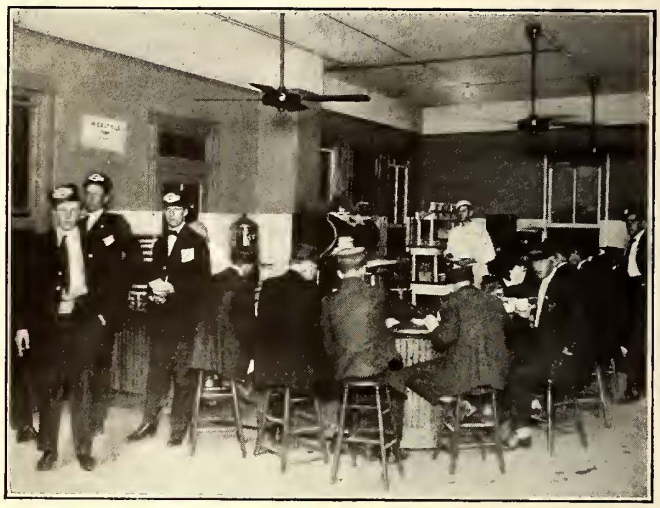
Flies are minimized by screening the entire clubhouse and by using three ceiling fans over the counter. The interior of the café is enameled in white up to a height of 5½ ft. The concrete floor of both café and lobby is flushed clean every day. The woodwork of the café counter is supported by metal legs 4 in. high to prevent dirt from accumulating underneath.

Prices are Attractive

These prices, combined with the cleanliness, explain why the men prefer their own restaurant:

Ham and eggs	$0.30	Grape nuts with a glass of milk	$0.10
Two eggs, any style	.10		
Ham sandwich	.10	Post toasties with glass of milk	.10
Cheese sandwich	.05		
Egg sandwich	.05	Coffee or milk	.05
		Hot cakes	.10

Purchases may be made only through the use of tickets sold in strips of ten at 40 cents for a face value of 50 cents. As these tickets are good at their



SANITARY CAFÉ OPERATED ON THE AT-COST PLAN

face value in buying, the discount from the foregoing prices is 20 per cent. Tickets are sold by the night cashier, whose office adjoins the café, from 7 p.m. to 7 a.m. The records of such sales are sent to the assistant treasurer, who as the *ex-officio* manager of the café department signs all checks monthly.

Supplies are bought through the purchasing agent upon requisitions made out by the transportation department. Groceries are bought at wholesale through a Houston jobber, and milk comes from a certified dairy. The company pays all overhead expenses, such as rent, light, water, gas and janitor service.

While doing a business of more than $500 a month, the restaurant for March and April did not quite clear operating expenses. The small loss incurred thus far, however, is of no moment when compared with the positive satisfaction of the men who use the café.

With the aid of David Daly, manager, the employees have just organized the Houston Electric Co-operative Association.

Representatives of the Victorian branches of the Australian Tramway Employees Association last month waited on the Minister for Public Works, and asked that airbrakes be installed on the Melbourne electric tramcars. The Minister agreed to place their views before the cabinet, and hoped that a provision to meet the case would be included in the forthcoming tramways bill.

Letters to the Editors

Classification for L.C.L. Freight Condemned

The Connecticut Company

New Haven, Sept. 2, 1918.

To the Editors:

I notice a letter in your last issue, commenting on the recent electric freight rate decision of the Indiana Public Service Commission. The author of that letter seems to disapprove of some of the new electric freight rates because they are higher than the corresponding steam railroad rates. To my mind the striking feature of the decision of the Indiana Commission was that after explaining that electric railway freight transportation is more nearly akin to express service than the steam carrier freight service the commission proceeds to establish six classes of freight. The convictions of the commission seem at variance with its finding. I also do not agree with the commission that the terminal cost of handling package freight is less than that of the steam carriers. How anyone can justify six classes of discounts from first-class rate for merchandise classified under the official or C. F. A. classification, when the freight is received in less than carload lots and the various classes move in the same car, I am unable to understand.

The first and most vital thing for electric railway express departments to accomplish is to get away from the use of steam road classifications. The service of electric road was never considered in drawing up these classifications. They therefore have no place on an electric road. As regards less-than-carload shipments on steam roads, nothing should be accepted at less than first-class rate. On electric lines there should be one class, one rate, as there is but one service, although allowances in the classification should be made for unusual shipments. That is to say, light and bulky articles should take higher than first-class rate, while extremely heavy articles should be subjected to two or three times the first-class rate.

You may be interested in the fact that a committee of accounting officers appointed by the Eastern Presidents' Conference rendered a report Jan. 1, 1917, covering its investigation of less-than-carload freight. The committee was made up of the following:

Assistant comptroller, Pennsylvania Railroad, chairman.
General auditor, Baltimore & Ohio.
Auditor of revenue, Delaware & Hudson.
Auditor of freight accounts, Erie Railroad.
Auditor of freight receipts, N. Y., N. H. & H.
Auditor of revenue, New York Central.
Secretary of Eastern Presidents' Conference.

A total of 1358 cars carload freight and a total of 1949 cars less-carload freight were observed and tabulated as to mileage, gross revenue, agency, office and platform expense, gross weight of car and contents, etc. The agency, office and platform expense per car was as shown in the accompanying table.

		Total	Average per Car	Increase (Percentage)
B. & O.	179 carloads	$50.12	$0.17	
	304 l.c.l.	2,600.32	8.56	5,035
D. & H.	100 carloads	51.24	.51	
	112 l.c.l.	695.72	6.21	1,217
Erie	377 carloads	65.57	.17	
	399 l.c.l.	2,386.58	5.98	3,517
N. Y. Central	259 carloads	43.82	.17	
	455 l.c.l.	3,223.73	7.09	4,170
N. Y., N. H. & H	215 carloads	40.26	.19	
	286 l.c.l.	2,429.06	8.49	4,468
Pennsylvania	228 carloads	45.38	.20	
	393 l.c.l.	4,109.17	10.46	5,230
Totals	1,358 carloads	$276.39	$0.20	
	1,949 l.c.l.	$15,444.58	$7.92	3,960

The Connecticut Utilities Commission approved our change in classification, the Indiana Commission seems convinced of the same thing, and the recommendations of the Committee of Accounting Officers were:

First—That less-than-carload rates should be increased.

Second—That there should be an increase in the minimum charge per shipment.

Third—That there should be established a minimum charge per package.

Fourth—That there should be a revision of classification for package freight, looking to reduction in the number of classes and establishment of rules that will require shippers to consolidate small packages in one container.

Fifth—That steps be taken to increase the loading of less-than-carload cars.

The Connecticut Utilities Commission approved the Connecticut Company's change in classification from the official freight companies' basis to an "express" basis, and the Indiana Commission seems convinced that the idea is right.

There seems to be a general, if very slow movement, along these lines.

V. S. Curtis,
General Traffic Agent.

Training Motormen for Emergencies

New York City, Sept. 4, 1918.

To the Editors:

Some time ago there appeared an article on psychological tests for motormen in your publication. This I read with interest. From my own experience and the study of others I believe that no great amount of dependence can be placed on that kind of test. The reason for this opinion is that a studious type of man can easily pass this test but make a complete failure at the controller.

All railway companies realize the danger of the weakness of the "human element," and great precautions are taken to protect against it. Nevertheless, accidents happen every day on some roads and motormen fail because "the correct thing to do in a severe emergency" has not been properly impressed upon their minds. At such a time the reasoning power of a motorman's brain is greatly handicapped by excitement, and he does just what has been impressed on his mind—no more, no less.

Mere rules never will prevent men from failing. Some companies have one rule to cover three or four types of cars in emergencies. This may be right or it may be wrong. Thus a rule for reversing which would work on a four-motor car would be practically worthless on a heavy two-motor car.

I have been in three electric railway wrecks and have seen old and tried motormen fail completely, causing death and destruction. Where was the judgment there? There was none. Excitement had entirely wiped it out, and as the motormen were running their cars automatically, they failed.

A motorman is expected to use judgment, but could

a man become a great violin player without practice? The same principle applies to the motorman in an emergency. If he has practiced what to do, he will not fail unless he is a very poor man. That is why I strongly indorse the use of the dummy control stand in the instruction of motormen. What is emergency judgment? Briefly I believe it is at least 75 per cent previous instruction and the rest divided between common sense and steady nerves. The moral of this is, don't depend too much on a motorman's judgment. This is my advice to railway officers, and I know by experience.

Another bad feature of the "human element" in electric railway operation is forgetfulness. For this reason, verbal orders and long drawn-out red tape rules should be tabooed in single-track operation. They don't remind; written orders and signals do, and standard association rules do. For personal reasons I cannot sign my name to this but would like to do so.

A SUBSCRIBER.

AMERICAN ASSOCIATION NEWS

War Board Issues Bulletin in Skip-Stop Campaign

THE Electric Railway War Board has sent out Bulletin No. 29, containing a letter from the United States Fuel Administration, dated Aug. 29, on the subject of skip stops.

This is the communication referred to on page 419 of this issue of the ELECTRIC RAILWAY JOURNAL. The lettter in part is as follows:

War's excessive coal demands, increasing from day to day, require us to conserve fuel in every possible way. Practically all of the industries of the country are saving fuel. Electric railway skip-stop operation presents one of the largest fields for fuel savings. The Fuel Administration urges that skip-stop service be adopted in the United States in cities having a population of 25,000 or above. The fuel savings effected by this system will be at least 1,500,000 tons annually. We therefore request all electric railways to co-operate fully with the Fuel Administration in its efforts to save coal through the skip-stop system.

We are sending letters to the state fuel administrators, who will in turn communicate with the public service commissioners, mayors, city councilmen, and all others who regulate our public utilities, asking them to assist in putting the skip-stop system into effect on Sept. 15, 1918.

Posters will be distributed to railway companies with instructions to insert them in prominent places in city cars. The posters contain a partriotic appeal to the public, asking it to support the skip-stop system, and explaining why it is an essential war measure.

Using the skip-stop system generally enables cars to be operated at 10 to 12 per cent higher schedule speed. The power saving varies from 8 to 16 per cent. Inasmuch as the cars operate at the higher schedule speed, it can be seen that the same service can be given with a lesser number of cars; or, providing the service warrants it, more service can be given with the same cars.

The importance of having the full co-operation of railway companies in making the skip-stop system a success in every city cannot be emphasized too strongly. This request from the United States Fuel Administration, to the state fuel administrators and all public officials concerned, is merely to have the skip-stop system operative during the period of the war. The continuance of this economic method will in all probability depend upon the way the plan is carried out by the individual railway companies.

We are addressing this letter to you as the representative of the electric railway industry. We expect the American Electric Railway Association War Board to aid in every way possible in securing the maximum fuel savings that are consistent with proper railway service.

We believe it is the patriotic duty of all railway men and of the individual members of the community to conserve fuel and man power by adopting the skip-stop system.

Appended to the letter is a summary of cities in which skip-stop operation has been adopted and an appeal from the War Board for its use wherever possible.

E. R. Hill for President of Engineering Association

AS REQUIRED by the constitution of the Engineering Association, its nominating committee has prepared the following list of nominations: For president, E. R. Hill, New York City; for first vice-president, W. G. Gove, Brooklyn, N. Y.; for second vice-president, C. L. Cadle, Rochester, N. Y.; for third vice-president, C. S. Kimball, Washington, D. C.; for secretary-treasurer, E. B. Burritt, New York City; for members of executive committee, F. C. Bedwell, Newark, N. J.; H. A. Johnson, Chicago, Ill.; L. C. Datz, New Orleans, La.; E. H. Scofield, Minneapolis, Minn.

Increasing Power Plant Efficiency

AT THE meeting of Manila joint company section No. 5, held on July 2, the discussion, which was largely along technical lines, was led by Miguel T. Borja, watch engineer power plant department Manila Electric Light & Railroad Corporation. He read a paper on the "Economical Production and Transmission of Electric Power," and in it enumerated the various pieces of power-plant apparatus essential for the conversion of the heat energy contained in coal into electrical energy. Mr. Borja laid stress on the necessity of keeping all apparatus clean and in good repair. In this connection he pointed out that the improper maintenance and operation of steam boilers results in from 6 to 20 per cent decrease in efficiency and that the condition of the condenser as to cleanliness and vacuum has much to do with the over-all efficiency of the steam turbine to which the condenser is connected. In the company's Morales power plant improved methods of operation in the boiler room have increased the boiler efficiency 10 per cent.

Relative to the efficiency of transmission lines Mr. Borja stated that while the power plant is much handicapped by machinery whose operation and efficiency is largely beyond control, the efficiency of a transmission line can remain as high as is practicable, the only limit being that of invested capital. The average loss in the lines of the company is about 15 per cent, although an additional 10 per cent is unaccounted for. This unaccounted-for loss is now being studied in an endeavor to eliminate it.

Pamphlet Describes Submarine Problems

The Naval Consulting Board and the War Committee of the Technical Societies have recently sent to the members of the technical societies a pamphlet entitled "The Enemy Submarine." It contains information already published of the construction of submarines, their methods of attack, an account of torpedoes used and their action, as well as the methods proposed for defensive and offensive protection.

Gasoline Motor Section Cars Decrease Labor and Cost of Track Maintenance

Maintenance of Way Department, Pacific Electric Railway, Uses Gasoline Motor Section Cars and Motor Velocipedes in Maintaining Signals and Tracks

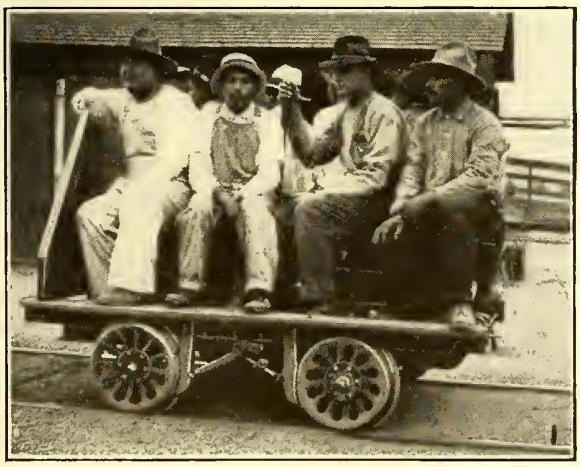
By Clifford A. Elliott
Cost Engineer Maintenance of Way Department, Pacific Electric Railway, Los Angeles, Cal.

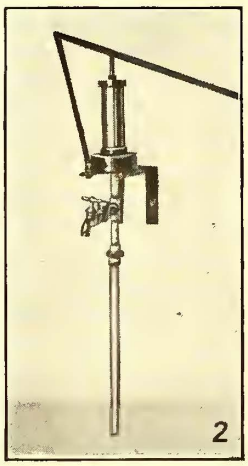
SEVERAL years ago the Pacific Electric Railway was able to reduce the number of men necessary for maintaining its track by providing power-driven equipment for the men to travel to and from their work. Additional mileage was assigned to each section foreman for maintenance and with a view of enabling the section gangs to reach their work quickly and without unnecessary fatigue, the use of hand cars was done away with and gasoline motor section cars were used to transport the laborers, their tools and small quantities of track material for repairs over the lines. This company has some 1200 miles of interurban lines to be maintained and now uses fifteen cars of the Fairbanks-Morse type to care for track maintenance and for use in bridge inspection work. At times a push car is coupled to the Fairbanks-Morse No. 33 gasoline section car in order to carry a few ties, track bolts, spikes, joints, etc., for making quick repairs in emergency cases, or as supplies for ordinary track maintenance work.

The company has 216 automatic flagmen installed at various public highway crossings and the maintenance of the signal bells at these locations is consolidated with the work of caring for the switch lights. In order to handle this work efficiently Buda Company's No. 10 NH one-cylinder gasoline motor velocipedes (Fig. 3) were provided, together with Fairbanks-Morse No. 26 two-cylinder cars (Fig. 1) for the same class of work. This readjustment of the men's duties of maintaining the warning signals and switch lights resulted in a very great saving of time and money.

The operation of these various classes of gasoline driven equipment made it advisable to provide gasoline supply stations at various points. Up to date the company has constructed twelve such stations, locating these at section camps where store and tool houses are provided and where the various track gangs assemble before proceeding to their day's work.

A standard supply station consists of a 100-gal. iron-oil tank sunk about 3 ft. below the surface of the ground. A 2-in. feed pipe with the necessary cap and air vent is provided for filling. A ¾-in. galvanized iron pipe leads from this 2-in. pipe to a pump installed inside the tool house. Two check valves are installed in this pipe, which make it unnecessary to recharge the pump to start the oil flowing when pumping. The pump is fastened to the wall of the tool house by an iron bracket which steadies it during the operation.





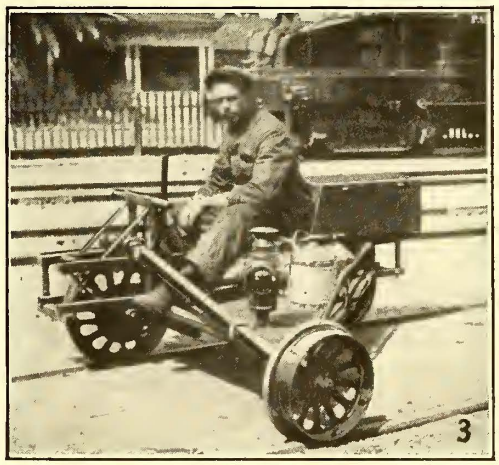


FIG. 1—GASOLINE MOTOR SECTION CAR; FIG. 2—GASOLINE PUMP IN TOOL HOUSE; FIG. 3—GASOLINE MOTOR VELOCIPEDE

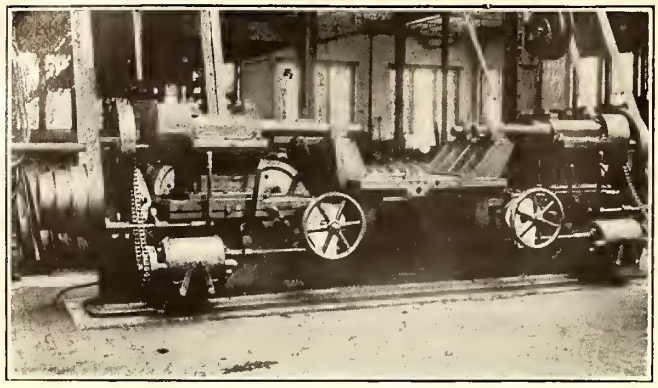
"Shooting Out" the Smokestack

A SIMPLE method of loosening soot in a chimney, which is recommended by E. I. du Pont de Nemours & Company, and said by them to cause no injury to the stack or lining, is as follows:

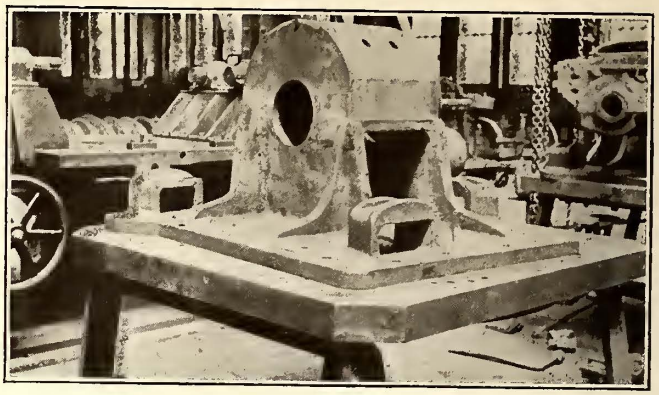
One or more charges of FFF blasting powder are discharged vertically in the stack from a cannon. This can be made of a piece of old 4-in. shafting, from 14 in. to 16 in. long, in the center of which a 1¾-in. hole 10 in. long is bored. A ¼-in. hole is bored through the piece to the bottom of the center bore to serve as a touch hole for inserting the fuse. The whole thing can be mounted on a pedestal about 6 in. in diameter so that it will stand in an upright position.

The method of operation is this: The powder is poured into the mouth of the cannon to about 2 in. from the top and it is tamped to the collar with dry clay. The fuse is inserted in the touch hole and in contact with the charge. The cannon is set at the bottom of the stack and the fuse ignited through the flue door, the latter then being closed. This charge is sufficient for a stack up to 100 ft. high and 4 ft. in diameter or more, the number of shots necessary thoroughly to clean a stack depending upon its condition. It is said that ordinarily three or four shots will clean a stack.

A coal-rationing scheme will shortly be introduced in Great Britain to compensate for the shortage in coal supply caused by the going into war service of a large number of miners.



FOUR-SPINDLE BORING MILL ARRANGED FOR BORING MOTOR SHELLS, CHICAGO SURFACE LINES



JIG AND ASSEMBLY TABLE MADE IN CHICAGO SURFACE LINES SHOPS TO HOLD MOTOR IN PLACE FOR REBORING

Utilizing a Four-Spindle Boring Mill to Rehabilitate 3000 Motors

Chicago Surface Lines Rebores Four GE-80 Motor-Bearing Seats Simultaneously, With a Record of Eleven Shells Per Day

ON THE Chicago Surface Lines it was for some time the practice to rebore motor shells on an ordinary engine lathe. Later a standard horizontal boring mill was used. With either of these machines it was necessary to reset the shell and change the boring bar each time a shell was bored. In 1917 it was decided to procure a machine which would handle this work more efficiently.

A four-spindle boring machine built by the Beaman & Smith Company was purchased, and after it had been remodeled in the Chicago shops it was fitted with Davis expansion boring bars made especially for this work. These bars run in special guides and have micrometer adjustment of the cutters. Two special jigs and two assembly tables were also built in the Chicago shops.

For the reboring process the motors, which are of the GE-80 split type, are taken from the trucks in the carhouses and brought into the shop. Here the armature and fields are taken out and the shell is cleaned. The shell is placed on the jig, which rests on the assembly table, by means of the shop traveling crane, and it is located by means of bolts passing through the pole pieces into corresponding holes in the jig. The final adjustment is made by setting the shell to a gage which gives its exact location relative to the assembly table. The axle and armature-bearing caps are bolted in place and the shell and jig are lifted to the boring mill table where the jig is located by dowel pins and clamped down by the cap screws tapped into the mill table.

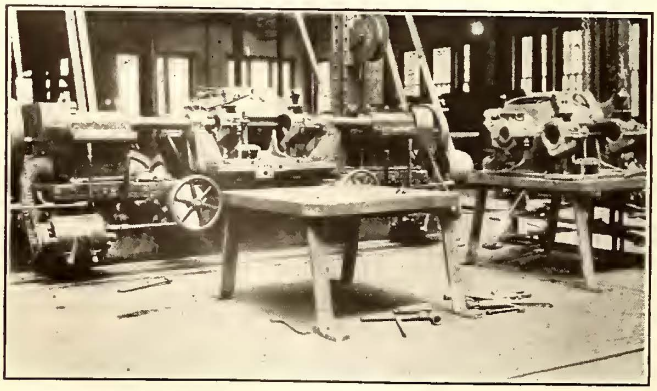
The work is handled by a machinist and two helpers, the helpers setting up a second shell while the first is being bored, thus keeping the machine working almost continuously. The mill operates at a cutting speed of 42 ft. per minute, and a $\frac{1}{32}$-in. feed per revolution, all four holes being bored simultaneously. The diameter of the axle and armature bearing seat is increased $\frac{1}{8}$ in., and new bearings are made to suit. Eleven shells have been bored in one day of nine and three-quarter hours, the average being nine to ten shells per day.

The armature bearings are made of brass and lined with $\frac{1}{16}$-in. babbitt. The axle bearings are also made of brass, but are not lined. The dowel pins for the armature bearing caps are being replaced by keys anchored in the caps. The axle caps and old dowel-pin holes are being filled by use of the oxyacetylene torch and redrilled and fitted with the case-hardened dowel pins.

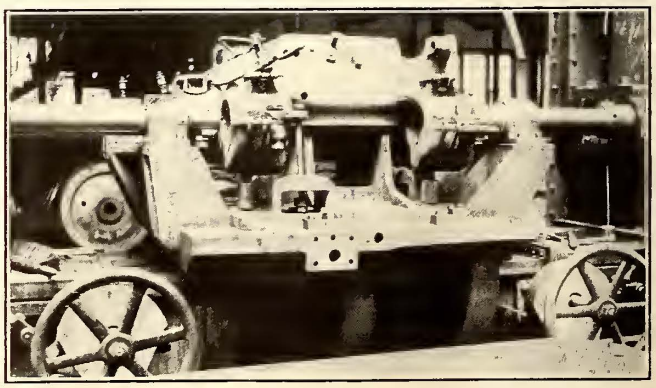
The commutator and armature bearings are made $\frac{1}{4}$ in. longer than they were originally, and a $\frac{3}{16}$-in. groove is turned on the outer end. A galvanized-iron cap is fitted over the end and is crimped into the groove, thus making the bearing practically dustproof.

In some cases it has been found necessary to build up the gear case seats on badly worn shells, also to plane off the axle and armature bearing caps to insure their truing up in the boring.

From the boring mill the shell is taken to the truck department, where it is cleaned and painted, and the motor is assembled. The motors which are being rebored have been in continuous service since 1905 without previous reboring. There are 3000 shells to be rebored.



ONE MOTOR SHELL ON BORING MILL TABLE WHILE SECOND IS BEING ASSEMBLED



MOTOR SHELL READY FOR SIMULTANEOUS REBORING OF FOUR BEARING SEATS

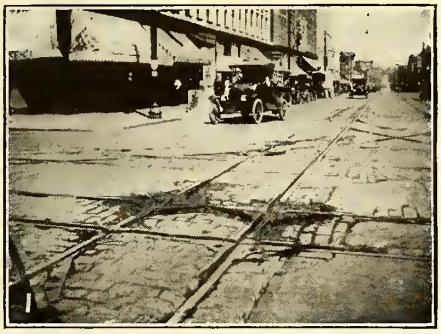
Solid Manganese vs. Manganese-Insert Special Work

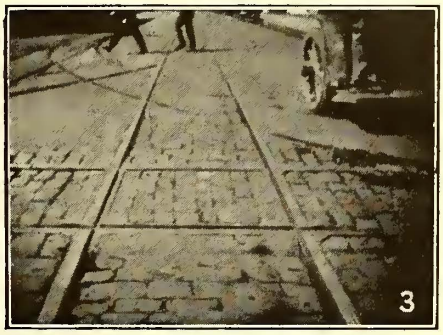
Supplementing the Author's Article in the Oct. 13, 1917, Issue of This Paper—Conclusions Favor Solid Manganese

By W. L. Whitlock
Office Engineer the Denver (Col.) Tramway

In July, 1910, this company placed a four-square 90-deg. crossing at the intersection of Fifteenth and Lawrence Streets, which was a portion of the grand union layout built for this location and exhibited at the electric railway convention in this city during that year.

Three of these crossings were manganese insert work while the fourth crossing was solid manganese. The manganese inserts were a source of continual maintenance while the solid manganese crossing has cost practically nothing to maintain, thus giving an actual comparison as to the relative value of the two different types of crossings, as both were subjected to the same amount of traffic.





DENVER SPECIAL WORK—FIG. 1—GENERAL VIEW OF SPECIAL WORK; FIG. 2—PRESENT APPEARANCE OF INSERT SPECIAL WORK; FIG. 3—PRESENT APPEARANCE OF SOLID MANGANESE CROSSING

To-day the manganese insert work is "shot to pieces," so to speak, and will be reconstructed at once, while the solid manganese crossing is apparently good for ten years more life.

The manganese insert was repaired time after time by the usual spelter process until such a condition was reached that the spelter did not hold long enough to warrant its further use. We then tried the experiment of thermit welding these inserts which was outlined in the Electric Railway Journal of Oct. 13, 1917, page 685. At the time when my 1917 article was written the substitution of thermit for the spelter was promising, but later it proved to be unsatisfactory in that it did not weld the manganese insert to the insert casting. In this experiment we had the co-operation of the manufacturers of thermit who were, however, not oversanguine as to the outcome.

One advantage of the use of thermit did show up in this experiment, namely, that, while the weld cracked around the edges of the insert and did not make a bond at this point, it did provide a solid foundation under the insert. Inasmuch as the bond was not complete between insert and the casting, a "rocking" motion or movement occurred under traffic and this resulted in the breaking up of the insert itself.

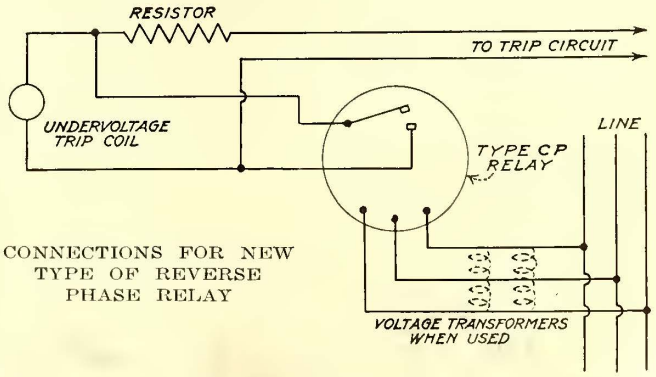
We had one case where a loose insert "jumped" out of the casting under a car and wedged in under the truck in such a manner as to cause a bad derailment, prior to the use of the thermit.

The accompanying photographs were taken of the crossings referred to. Fig. 1 shows a general view of the special work with the manganese insert crossing in the foreground with the solid manganese crossing back of it. The curve crossing in the background is a manganese insert layout also. Fig. 2 shows a close-up view of the insert special work as it appears to-day, while in Fig. 3 is the solid manganese crossing to-day. The only work done on the solid manganese crossing since its installation was the welding up of, and grinding off level of the frog points after seven years of service.

Relay to Protect Motors Against Phase Reversal

If a three-phase motor is disconnected from a circuit and the phases reversed when it is reconnected, it will, naturally, run backward. Such a reversal may occur and has occurred when the motor is disconnected for repairs, through an error in reconnecting leads at the power house or substation, or from a number of other causes.

In many cases the reversal of rotation of a motor, aside from the inconvenience it causes, is not a serious matter as the error can be corrected at the motor terminals. In other cases, however, serious consequences may result. The reversal of an elevator motor, for instance, might result in wrecking the machinery and loss of life.



CONNECTIONS FOR NEW TYPE OF REVERSE PHASE RELAY

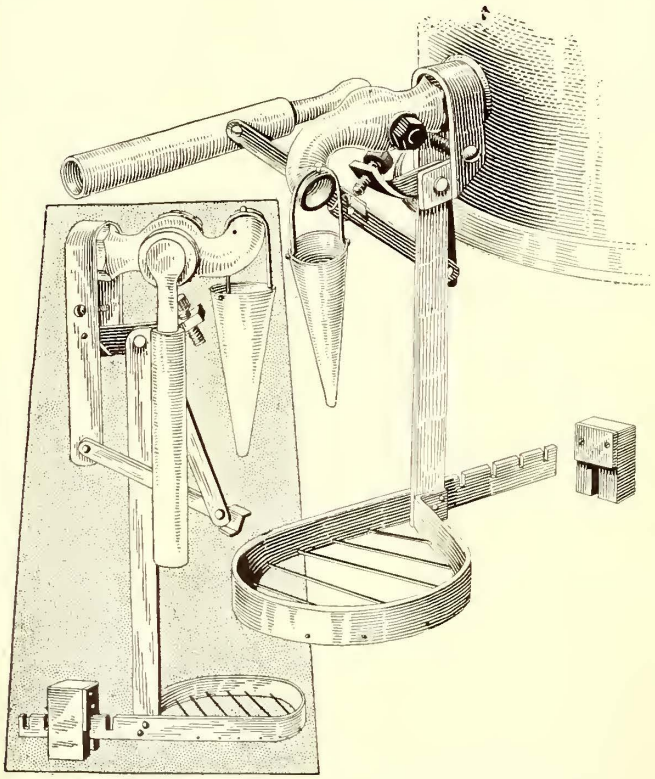
To protect motors against phase reversal the Westinghouse Electric & Manufacturing Company has developed a reverse-phase relay. If a phase is reversed, if a phase fails, or if the voltage drops below 75 per cent of normal, the relay contacts close and trip the circuit-

breaker, either through a shunt-trip coil or by short-circuiting an undervoltage trip coil having a series reverse resistor.

The relay operates on the induction principle. When properly connected the torque holds the contacts open against the restraint of a spiral spring. On low voltage the torque diminishes and the spring closes the contacts. On reversal of phase connections the reversed torque assists the spring in closing the contacts.

Automatic Oil Can Filler Prevents Waste

TO PREVENT the overflowing of oil, through carelessness or misjudgment, while oil cans are being filled, the arrangement shown in the accompanying illustration has been devised to provide an automatic safeguard. The apparatus is constructed of strap iron $\frac{3}{4}$ in. x $\frac{3}{16}$ in. and is intended for attaching to the faucets of oil tanks or barrels used in shops. The can to be filled is placed in the tray of the apparatus and a small counterweight is placed on the end of the lever to balance the weight of the can. The opening of the faucet brings the two links, forming a toggle joint, into contact with the adjusting screw at the end of the lever supporting the can. As the can is filled its weight causes the lever to swing and the screw to press on



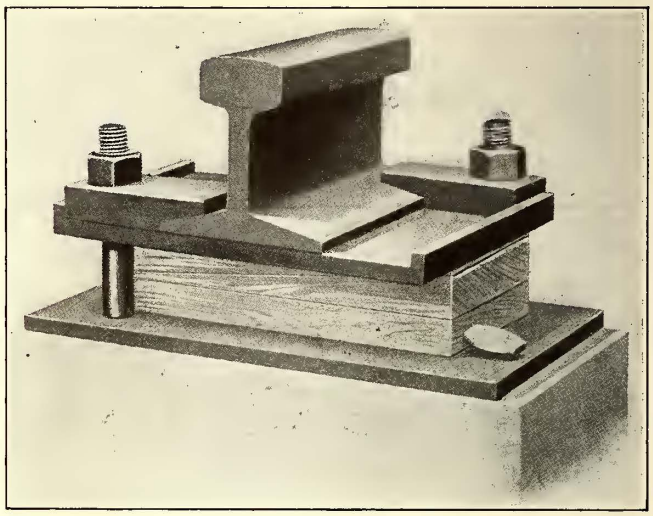
AUTOMATIC FAUCET CLOSING DEVICE FOR FILLING OIL CANS

the toggle joint. As soon as this is forced over dead center the faucet is closed by the action of the lever and weight attached to it. No springs are used. The set screw on the large swinging arm can be adjusted for any sized can and provides a definite closing point within very close range. The small swinging funnel shown in the illustration is merely a safety device for use when filling small cans.

Fittings for Shimming Tracks

Detailed Description of An Adjustable Track Shim That Can Be Easily and Cheaply Applied and Removed

THE freezing and thawing experienced during the winter season produces inequalities in the roadbeds of electric roads and makes it necessary to shim the rails in order to correct these rough conditions. The usual practice consists of inserting wooden wedges and slabs under the rails. These are spiked to the ties usually by the same spikes that hold the rails in position.



ADJUSTABLE TRACK SHIM

Where the shimming is heavy the spikes do not penetrate the ties to sufficient depth to insure proper fastening.

The "Trasco" adjustable track shim has been placed on the market by the Track Specialties Company, New York, in an endeavor to provide a more substantial construction for shimming and at the same time to provide for adjustment as the track alignment changes. This device consists of two plates and two clips for clamping the rail. The bottom plate is securely spiked to the ties and the rail resting on the top plate is held by two clamps and fastened to the bottom plates by two carriage bolts. These bolts are inserted head down, the bottom plate being countersunk to receive the head and provided with a square hole to receive the square shank of the bolt. This keeps the bolt from turning in applying the nuts.

Wooden wedge-shaped shims are inserted between the two plates to give the alignment desired. The plates are provided with corrugations next to the wood to keep the shims from slipping when they are once clamped in position and in addition two small holes are provided in the top plate so that nails can be driven into the shims if desired.

The advantages claimed for this construction are these: (1) Adjustments as small as one-sixteenth inch are possible. (2) Adjustments can be easily and quickly made by loosening the nuts and driving in wedge shims to give the desired height. (3) Inequalities can be corrected as often as necessary and the shims applied year after year without the necessity of purchasing new parts. (4) The device provides a safer method for track shimming than that usually employed.

Recent Happenings in Great Britain

War Conservation Measures Largely Monopolize Attention of Managers of English Properties

(From Our Regular Correspondent)

In connection with the appointment of a select committee to investigate the question of the transport of goods, the highways committee has made a recommendation which has been adopted by the London County Council that an expenditure of £100 should be incurred in the conversion of two tramcars for an experiment in the carriage of goods on the Council's tramways. The highways committee has also reported that in view of representations from the Royal Commission on Paper, experiments have been made in the use of canvas bags on tramcars for the collection of used tickets. Only about 12 per cent of the tickets have been deposited in the bags, but it is believed that if an appeal were made to the public and all cars were fitted with bags a better result would be obtained, and the Council has adopted the committee's recommendation that £800 should be expended upon bags. It is stated that the Glasgow Corporation, which uses annually 272 tons of tickets, collects not more than 50 per cent of them.

London Saves 100 Tons a Year

The London County Council has saved 100 tons of pulp a year by simplifying its tickets, and the annual consumption is now only 270 tons, a much smaller quantity on the basis of the number of passengers carried than that consumed in Glasgow. If one-third of the tickets used were collected in the bags they would realize at present prices about £720 a year. The proposal has been made, however, not primarily on a commercial basis, but in view of the national need for saving paper.

Short Strike in Liverpool

A tramway strike occurred in Liverpool recently involving a considerably curtailed service for a day or two. The strike was the result of trouble between the National Tramways and Vehicle Workers' Union, which has headquarters in London and is affiliated with the Transport Workers' Federation and the tramway section of the Municipal Employees' Association, which claims 90 per cent of the tramway employees as members. The latter association called for a strike by the employees as a means of protest against the managerial methods.

Considerable Disorder at First

At its start the strike was marked by animated scenes. Early in the morning a crowd of women conductors stopped the munition workers' cars on one of the routes, and in the evening a number of strikers made for cars leaving a depot, pulled the women conductors off, threw mud at the drivers, smashed the windows of the cars, and cut the trolley ropes. At a meeting of the strikers it was agreed to submit the matter to arbitration, and the following statement, signed by Mr. Mallins, the general manager of the tramways, was read: "We desire to state that the tramways committee at a special meeting formally approved of the course adopted by the secretary of the Municipal Employees' Association in applying to the Chief Industrial Commissioner to arbitrate on the demands of the Liverpool Tramway workers, and agreed to abide by the result of such arbitration. They further agreed that the workers on returning to work forthwith should be reinstated, and that the general manager or his deputy would be pleased at all times to see the secretary or a duly accredited official of the Municipal Employees' Association with respect to any bona-fide complaints that may exist."

Mr. Spencer Resigns from Bradford

C. J. Spencer, the general manager of the Bradford Corporation Tramways, has tendered his resignation to take effect on Nov. 1, in consequence of having accepted a position with the Underground Electric Railways, London. Mr. Spencer has been general manager of the Bradford tramways for more than twenty years, during which time the receipts have risen from £8,000 in the first year to nearly £400,000 last year. It is estimated that the current year will result in revenue of about £500,000.

Coal Economy Necessary

A meeting of the Board of Trade advisory tramways committee of the Lancashire, Cheshire and North Wales districts was held recently in Liverpool, to consider the question of the economizing of coal in the generating of electricity, and it was decided that the present supply must be curtailed by 15 per cent. This departure will possibly result in a reduction of the tram services. Considering the large amount of work of national importance that is being done in Liverpool it is not expected that the service will be very much restricted, but an alteration will undoubtedly be made by the railways in the runs to the outside places in Lancashire and Cheshire.

The North-Eastern Railway has adopted an electrically-propelled luggage barrow, which in the near future will be brought into use at the Leeds and other important stations on the system. The new barrow is similar in size to the old four-wheeled luggage carrier still in general use, and is capable of carrying approximately 25 cwt. of luggage. The driver of the barrow stands on the front, and there manipulates the guiding and propelling apparatus. The present unusual shortage of labor has prompted the innovation by the railway.

The text of the statutory undertakings (temporary increase of charges) bill—the measure designed to confer on gas, water, tramway and electric undertakings, power to increase their charges—is published elsewhere in this issue.

Reports of Interest to Investors

When presiding at the recent general meeting of the British Electric Traction Company, Ltd., the chairman said that several reports had been issued by government departments during the year which deserved careful study by all who had invested in the electrical industry. He called the shareholders' attention to three reports. The first was by the Board of Trade electrical trades committee in regard to the position of the electrical trades after the war; the second by the coal conservation sub-committee of the Ministry of Reconstruction on Electrical Power Supply in Great Britain; and the third was that of the committee appointed by the Board of Trade to consider the question of electrical power supply. These three reports were a condemnation of the electrical legislation of the last thirty-six years, and a vindication of the men who had persistently opposed the legislation and its tendencies.

Power Distributing Centers Planned

Plans are in preparation for a scheme of far-reaching importance in relation to the generation and supply of electricity within a large portion of the Midland area. The project forms a leading factor in the national plan for the establishment of great power-distributing stations in various centers of the country. It is proposed to set up the new works on the banks of the Trent in the immediate vicinity of Nottingham, the area of distribution embracing on one side, within a 40 mile radius, Derby, Leicester, Burton-on-Trent, Stafford, and Lichfield, and many of the intervening places trending from Lichfield in the general direction of Coventry.

The Nottingham Corporation is assuming responsibility for the scheme, and the committee appointed to consider the matter has arrived at the unanimous conclusion that Nottinghamshire possesses all the essential factors required in any area for a scheme of this character, including (1) ample supply of water for condensing purposes, (2) proximity of collieries, (3) railway communication between collieries and suitable sites adjoining the River Trent, (4) large industries requiring electric power. Taking 40 miles as a radius over which electric power can be economically supplied, many important towns would, as indicated, be included, with smaller places and numerous works in the various counties. A. C. S.

News of the Electric Railways

TRAFFIC AND TRANSPORTATION

FINANCIAL AND CORPORATE · PERSONAL MENTION · CONSTRUCTION NEWS

Seattle Questions Unsettled

Company Rejects Proposal of City to Lease Railway Lines for Fixed Rental

The officials of the city of Seattle, Wash., and the Puget Sound Traction, Light & Power Company are apparently as far apart on the question of settling the transportation problem in Seattle as they were at the beginning of conferences weeks ago. The city's offer to the company to lease the lines in the city and pay the company a set rental has been unequivocally refused by the traction officials.

Company Makes Sale Offer

A counter proposition has been presented to the city by the company offering to sell the system to the city, the difference in the earnings of the company under the proposed agreement and the earnings of the company for the five-year pre-war period to be deducted from the sale price. The company failed to set a definite price on its properties, or to announce the principles which would govern in the fixing of the price.

The situation has been further complicated by a possibility that unless some action is taken within a few days, the trainmen of the company will refuse to wait longer for payment of the wage schedule agreed upon, and will seek other employment.

Realizing that no progress is being made by the city and traction officials in relieving the impending seriousness of the transportation situation, the United States Shipping Board through its local representative, Capt. John F. Blain, district officer, and Edward A. West, Pacific Coast representative of the passenger transportation and hauling division of the board, on Aug. 30 issued an ultimatum to the city and traction officials, outlining an operating agreement which, it is insisted, must be adopted at once by the City Council.

Company's Proposal Rejected

At the same time that the letter from Captain Blain and Mr. West was sent out, Mayor Ole Hanson and Councilman T. H. Bolton, president of the Council, signed a letter addressed to the Puget Sound Traction, Light & Power Company, rejecting the company's counter proposal and reiterating the city's offer to lease the company's lines for a period up to six months after the end of the war.

Mr. West, in a recent conference with city officials, criticised the city and traction officials for not coming to some satisfactory operating agreement, and asserted that the period when the government seriously considered taking over the city railways and operating them as a part of its war program had passed.

Mr. West stated that the government was perfectly willing to help finance the transportation situation in Seattle, but that it would not be a party to building up competitive systems which were not devoting their whole energies to the winning of the war. He states that the sensible thing for the city to do is to build the proposed elevated municipal line (for which the government will extend the necessary loan) and then allow the traction company's equipment to be used over this line to take care of shipyard workers. Mr. West states that the government will not, on his recommendation, advance money for the traction company to build another line into the industrial district, but will do everything possible to aid the construction of the line on Avalon Way, which is needed for workers engaged in essential occupations in that section.

Mr. Walsh on Labor's Future

Frank P. Walsh, joint chairman of the National War Labor Board, sent a message to be read at the Labor Day celebrations. Mr. Walsh said in part:

"This world war has provided the beginning of a splendid education in democracy. In this re-examination the country has discovered one thing at least about democracy—that it must mean more than old-fashioned political democracy. The old idea that when everybody votes you have a democracy is pretty well exploded.

"This country, I promise you, is beginning to understand that we may have 100 per cent democracy in the form of our political government, and yet have autocracy of the most despotic type in industry. It is now clear to understanding men, and especially to those who work for a living, that to attempt to control the conditions of one's life through the roundabout way of political oratory and legislative action is futile, and that this old-fashioned attempted substitute for a direct and common-sense control through the workshop must be thrown into the scrap heap of pre-war absurdities. Political democracy is a delusion unless builded upon and guaranteed by a free and virile industrial democracy.

"I believe that the process of democratization will continue until there will remain not one wage worker in the country deprived of full voice in determining the conditions of his job and consequently his life."

Philadelphia Insurance Plan

$7,000,000 Blanket Policy Placed With Metropolitan Company Under Modified Co-operative Plan

Providing for life insurance for its employees under the amended co-operative plan, the Philadelphia Rapid Transit Company, by action of the board of directors on Aug. 26, arranged for a $7,000,000 insurance policy with the Metropolitan Life Insurance Company, New York, in the form of a blanket policy, effective on Sept. 1, 1918. Under this, each employee a year in the service may secure a $1,000 policy, in accordance with terms of the plan. This is in addition to the money received by virtue of the workmen's compensation act and, also, in addition to $1.50 a day sick benefits and $40 a month pension payable under the terms of the amended co-operative plan.

The terms of the life insurance policy are most favorable to the employees. Many of the older employees could not, except for this plan, secure insurance upon their lives at any price. An individual policy for $1,000 will be given into the personal custody of each member. In the event of the employee leaving the service, the insurance company undertakes to reinsure such employee without requiring a physical examination. Employees who leave the company to engage in military or naval service are not insured while absent; they are, however, assured of reinsurance as soon as they return to the employ of the company.

Nearly All Eligibles Sign

Because of the great inroads made by the draft and other governmental activities, only about 7000 of the company's employees out of a total of 10,000 have as yet become eligible by being one year in service. Practically all of the eligibles have signed the cards approving the plan and the insurance becoming effective under this blanket policy as of Sept. 1 will approximate $7,000,000. This amount will increase as the newer men become eligible by being in service one year until a possible sum of $10,000,000 may be taken.

Some very interesting sidelights upon the question of insurance and sick benefit protection among the company's employees have developed. In one instance, a man who has been with the company for many years has been paying at the rate of $72 a year for a $1,000 policy. Under the co-operative plan, he will be enabled to obtain the same protection, plus sick benefits of $10.50 a week and a $40 monthly pension, for an annual outlay of $12.

Protests Wage Award

New Orleans Company Wants Award Suspended, but Will Pay Back Wages

The board of directors of the New Orleans Railway & Light Company, New Orleans, La., has decided to pay its employees the increased back pay resulting from the award of the War Labor Board, notwithstanding the fact that the company's application for a reconsideration of the case and a suspension of the award has been acknowledged and taken under consideration by the War Labor Board and no decision has been rendered thereon. Payment will be made without prejudice to the company's right to persist in its application for reconsideration and suspension.

The company says that in previous statements made to the public its reasons for applying for a reconsideration and suspension have been clearly set forth. The company feels in a general way that the award grants to certain classes of labor wages greatly in excess of what the steam railroads are paying similar labor, and in many instances common labor receives a higher wage than certain conductors and motormen.

Prior to the labor award, the company borrowed $1,000,000 from the War Finance Corporation to enable it to meet its obligations. The company has been holding out of this money a sum sufficient to pay its city taxes so as to protect itself against delinquency and not to embarrass the city of New Orleans in the collection of its necessary revenue for public purposes. In determining to pay the increased back wages, the company has been compelled to encroach upon the fund which it had reserved for taxes. In this way alone is it able to make the payment.

Interurban Terminal Plan Revived

The plan of building a new combined steam and interurban passenger station to face on the Public Square at Cleveland, Ohio, has been revived, but just what interests are behind it cannot be learned. Former Governor Myron T. Herrick will be chairman of a committee of five business men which will serve in the intiation of an ordinance providing for the relocation of the passenger traffic of the city, and it is supposed the Van Sweringen brothers are the backers. The Cleveland Union Terminals Company, with a capital stock of $10,000, was recently incorporated by Attorneys John L. Cannon and Charles W. Stage, and they have represented the Van Sweringens in the past.

O. P. and M. J. Van Sweringen control the Cleveland & Youngstown Railway and the Nickel Plate Railroad. They are also building a large freight terminal in what is known as "the flats." Many of the features of the proposed new depot fit into plans they have had in mind for several years, including a depot which was to be connected with the new Hotel Cleveland, now nearing completion.

Roads from the West and Southwest would come to the new location through Walworth Run from West Thirtieth Street over a new bridge to be built across the Cuyahoga River. Those from the east and southeast would come to the station through Kingsbury Run. The present tracks through the city would thus be turned over entirely to freight service.

Plans call for separate grades for steam roads and interurban lines. All of them can reach the point without much trouble. The building would face north at the southwest corner of the Public Square.

Chicago Corruption Charges Fail

Failing to find evidence on which to base indictments supporting the charges of bribery and corruption made by the State's Attorney in connection with the new Chicago traction ordinance, the Grand Jury on Aug. 31 resorted to the unusual procedure of indicting the ordinance itself. This was the outcome of charges of undue influence and counter charges of "politics" which have stirred the people of Chicago since the new franchise was approved by the City Council recently.

The State's Attorney did not encourage the suggestion that Special Counsel Fisher for the city be allowed to explain the ordinance to the jurors. The result was a lengthy report with an appendix prepared by the State's Attorney giving 168 reasons why the ordinance should not be indorsed by the people. The grand jury condemned the ordinance as a "vicious, ill-considered, hasty and one-sided bargain." The local newspapers refuse to take the charges seriously and it has been suggested that a special session of the City Council be called to demand an investigation by a special State's Attorney. Meanwhile much capital is being made of the adverse report in the pending political campaign.

During the inquiry by the Grand Jury many Aldermen were subpoenaed as witnesses.

Engineers and Draftsmen Wanted

The Division of Engineering, United States Employment Service, 29 South La Salle Street, Chicago, Ill., has received an urgent call from important industries for fourteen trained men. The call is a varied one and is indicative of the present need for experienced engineers and draftsmen of training and ability.

The Division of Engineering will not consider applicants who are already engaged in essential industries, as it is concerned only in filling war needs and not in creating them.

All technical men who wish to enter the service of the Division of Engineering should address A. H. Krom, Director of Engineering, 29 South La Salle Street, Chicago, Ill.

Women a Problem

The Eternal Question Has a New Phase Owing to Objections by Cleveland Men

After a day of discussion over the right of the Cleveland (Ohio) Railway to put women on the cars as conductors, the local union officials announced on Aug. 31 that all further movements would be delayed, pending the arrival of W. B. Fitzgerald, vice-president of the Amalgamated Association, to take part in the negotiations. He was expected in Cleveland early in the week.

Men Demand Inquiry

The men asked the company to cooperate in an investigation as to whether a sufficient number of men could be obtained to operate the cars, and that women conductors be removed from the cars pending the investigation. The company interposed no objection to an investigation, but could see no reason for its co-operation in making it.

The request to remove women conductors from the cars was refused and J. J. Stanley, president of the company, announced that the company would continue to employ both men and women, the men to take places as motormen. Mr. Stanley told the officials that the shortage of men was so serious that 400 daily trips have been discontinued. The union men insist that the contract between the company and the union provides that the latter shall be consulted in case of any intention to employ women, but Mr. Stanley denied that there was any provision of the kind in the contract.

An investigation was put under way the latter part of last week by Fielder Sanders, Street Railway Commissioner, to determine whether everything possible was being done to secure male help. Both he and Mayor Davis declared that adequate service was the first consideration. While they would prefer to see male help employed, the company must take any it can secure rather than allow the service to suffer.

Women Not to Replace Men

The union has been assured that no men will be discharged to make room for women. While many women have been put on the cars for training, only one has actually been put in charge of a car. A car on the Euclid Avenue line was operated by a woman on Aug. 31.

William Rea, secretary of the local branch of the Amalgamated Association, notified President Stanley on Sept. 3 that all the men would leave their cars at midnight on Sept. 4 unless the women conductors were withdrawn by 2 o'clock that day, pending the completion of an investigation into the need of employing women. Mr. Stanley said the company would not surrender its right to employ whomever it saw fit. The union officials claim that if an investigation shows that a sufficient number of men cannot be secured to operate the cars, no objection will be made to the employment of women.

News Notes

Full Service on New York Line.—Practically all of the men on the Third Avenue Railway, New York, N. Y., who left their positions through the suspension order of their union have since applied to be reinstated. The undesirables the company refused to reinstate. Cars on all lines were running on schedule on Aug. 28.

Cincinnati Employees Grow Impatient.—Officers of the local branch of the Amalgamated Association at Cincinnati, Ohio, state that the men will not wait for a referendum on the newly revised franchise ordinance recently passed by Council for an advance in wages. They will not strike, the officers say, but will seek other employment where better wages are paid.

Strike in Texarkana.—Service on the lines of the Southwestern Gas & Electric Company in Texarkana, Tex., was crippled on Aug. 20 by a strike of motormen. All but three of the regular motormen failed to report for duty, but cars were manned by other employees and a semblance of service was maintained. The grievance of the striking motormen is that the company refused to discharge an employee at their request.

Another Twin City Wage Advance.—After a conference with the Co-operative Association of Employees, Horace Lowry, president of the Twin City Lines, Minneapolis, Minn., announced an increase in wages effective on Sept. 1, not naming the per hour increase, but saying that with the increase in wages granted on Aug. 1, the expenses would be increased $900,000. The president said with the increased expense it will be necessary to rearrange schedules and decrease the service further, giving only the service absolutely necessary to carry the public. The wage advance is the fourth in a year.

Montgomery Employees Strike.—The employees of the Montgomery Light & Traction Company, Montgomery, Ala., went on strike on Aug. 17. The questions of unionization and wages are said to be involved. An agreement was reached between Colonel Clarke, commanding the division at Camp Sheridan, President Tillis of the company and the union for the operation of all cars to and from the camp. The union men volunteered to operate the cars on condition that Mr. Tillis would pay the regular wages and would not attempt to put non-union men on any of the camp lines. Mr. Tillis agreed to the proposition.

Atlantic City Men Want More.—The platform men of the Atlantic City & Shore Railroad, Atlantic City, N. J., want an additional 5 cents an hour for each conductor and motorman. The men are now receiving from 31 to 35 cents an hour on the Atlantic Avenue division and from 33 to 37 cents an hour on the Ocean City division for a day of ten hours to be completed within twelve hours. The men also demand recognition of the union. Another matter which the men want settled is the employment of Atlantic City firemen to operate cars when the firemen are not on duty for the city. The railway contends the employment of firemen is necessary if it is to keep all the needed cars running.

Wages and Fares Coupled in Louisville.—In the matter of the demand of the union on the Louisville (Ky.) Railway for an increase in wages, the company has offered the men a temporary advance of 7 cents an hour and asks the union to allow it three months' time in which to have the books of the company examined, to ascertain if the present earnings will allow the increase demanded. The union has refused to accept these terms and will place the matter in the hands of the War Labor Board for adjustment. The railway is making an effort to have fares raised so that it will be in position to meet the demands of the union and has asked that the Louisville Board of Trade cooperate with the company in securing the higher fares.

Buffalo Employees Stick by Company.—Union platform employees of the International Railway, Buffalo, N. Y., will continue to work for the wage increase granted them by the company on June 1. This provides for the sliding scale between 35 cents and 42 cents an hour. The scale of wages allowed by the War Labor Board, an increase of 6 cents an hour over this pay, was made contingent upon the company's right to collect a 6-cent fare. At a meeting of the company's employees it was agreed to remain at work on the old scale of wages until such time as the company is relieved from the obligation of charging a 5-cent fare and then a demand would be made that the company pay the scale recommended by the War Labor Board.

Spokane Men Want Increase.—Increases in wages for trainmen of the Spokane (Wash.) Traction Company to 50, 55 and 60 cents an hour have been asked by the union committee on wages. A conference on the new schedule was held with officers of the company. It is understood the proposal includes a request for an eight-and-half hour day. The increases are based as follows: For the first six months, 50 cents an hour; for the second six months, 55 cents an hour; after the first year, 60 cents an hour. The men are now being paid on a scale announced about two months ago, as follows: First year, 33 cents an hour; second year, 34 cents an hour; after third year, 36 cents an hour; fifth year, 37 cents an hour; and after that 39 cents an hour. Men on one-man cars are paid 4 cents an hour additional.

Wage Conference in New York.—Arrangements were made for a joint conference during the week ended Sept. 7 between the officials of the Interborough Rapid Transit Company, New York, N. Y., and representatives of its employees to readjust the wage scale. The present wage scale expired on Sept. 1, and in his frequent communications with the Mayor early in the year on the subject of an increase in fares, T. P. Shonts, president of the company, stated that it would be necessary to increase wages. Employees of the company have been endeavoring to agree upon the amount of increase which would be satisfactory to all, but the matter was left in abeyance until after it could be discussed with the company. Relations between the brotherhood of employees and the company officials have always been cordial, and no fear has been expressed that an amicable agreement would not be reached.

Ottawa Wage Award Announced.—The Ottawa (Ont.) Electric Railway has accepted the award of the Dominion Labor Board of Appeal, which recommended that the employees of the company should be granted a wage schedule providing a minimum rate of pay of 35 cents an hour and a maximum of 39 cents. The increase in wages which the employees have obtained in all branches, together with the overtime, will mean an additional annual expenditure to the company of more than $200,000. The company contends this means that practically the net earnings of the road this year will go to the employees, and that if the company is to survive, an increase in the passenger tariff is inevitable. The men struck recently following an award made by a conciliation board. Settlement of the matter was then referred to the Dominion Board. The men have also accepted the award.

Program of Meeting

American Bankers' Association

The forty-fourth annual convention of the American Bankers' Association will be held in Chicago the week of Sept. 23 to 28. It will be a war convention, and the various sessions will be devoted largely to addresses on topics of the day.

Among the speakers who will address the convention are W. H. Vandervoort of the Root & Vandervoort Engineering Company, East Moline, Ill., whose subject will be "Relations Between Employer and Employee."

The Savings Bank Section's program includes a discussion of "The Effect of the War on Railroad Securities," by Samuel Untermyer, counsel to the National Association of Railroad Security Owners, and Francis H. Sisson, vice-president of the Guarantee Trust Company, New York.

Samuel Insull, president of the Commonwealth Edison Company, Chicago, will discuss the situation in respect to public utility securities.

Financial and Corporate

Electric Railway Statistics

Situation in Eastern District More Alarming Than That in Either Southern or Western

The outstanding feature of the comparison of operating statistics for electric railways for May, 1917 and 1918, compiled by the information bureau of the American Electric Railway Association and presented herewith, is the increase in the operating ratio.

For the entire country this amounts to 2.72 per cent, the ratio for 1918 being 67.67, as against 64.95 in 1917. The worst situation is found in the Eastern district, where there has been an increase of 3.32 per cent, as against 2.30 for the Southern district and only 1.58 for the Western district.

The per cent of increase in operating expenses for the country is almost twice the per cent of increase in operating revenue, while for the Eastern district it is a little more than double. Thus, for the country, the operating revenues have increased 5.86 per cent, while operating expenses have increased 10.28. In the East the increase in revenue amounts to 5.41 per cent and the increase in expenses 10.91 per cent. The Southern district fares better, the increases being 11.99 and 16.37 per cent respectively. The West shows the best ratio between these two items, the figures being 5.66 per cent and 8.22 per cent respectively.

The net earnings for the railways show a decrease of 2.35 per cent and again the showing in the Eastern district is the worst, an actual decrease of 5.09 per cent being recorded. Both the South and West show increases, the figures being 5.69 and 0.87 per cent.

The returns from the city and interurban electric railway companies, as shown in detail in the appended tables, have been classified according to the following geographical grouping: Eastern District—East of the Mississippi River. Southern District—South of the Ohio River and east of the Mississippi River. Western District—West of the Mississippi River.

Interborough Bonds Offered

A syndicate composed of J. P. Morgan & Company, First National Bank, National City Company, Harris, Forbes & Company, Lee, Higginson & Company, Halsey, Stuart & Company, and Kissel, Kinnicutt & Company has been formed to sell $33,400,000 of Interborough Rapid Transit Company's three-year 7 per cent secured convertible notes at 98½ to yield investors slightly more than 7½ per cent. The War Finance Corporation has agreed to take $12,500,000 of the notes, with the understanding that in the event that the syndicate succeeds in disposing of the entire issue of $33,400,000 it will be relieved of its obligation, the War Finance Corporation being compensated just as it was in the case of the recent Bethlehem Steel Corporation financing. The notes are to be secured by $52,187,000 of Interborough Rapid Transit Company first and refunding mortgage 5 per cent bonds, and will carry the privilege of conversion into such bonds at 87½ with adjustment of interest. The notes are to be redeemable at 103 and interest during the first year, 102 and interest during the second year, and during the third year they will be redeemed at 101 and interest.

Disaster Ahead

John A. Beeler Favors National Administrator and Remission of Onerous Franchise Terms

John A. Beeler, traffic engineer and adviser to the Public Utilities Commission of the District of Columbia, following his return on Aug. 30 from a trip through the East, where he gathered information first-hand as to conditions confronting the traction companies, declared the situation to be far more serious than is generally recognized. Mr. Beeler states that increased cost of labor and materials, taxation and jitney competition have all but put some companies out of business and are threatening the existence of others.

As an immediate measure of relief he urges favorable action by the government on the proposal, already submitted, that a national administrator or board be appointed with power of recommendation, advice or request to the state and municipal authorities which exercise control over this class of utilities. Mr. Beeler suggests that such official should put all economy measures possible into effect in the operation of lines and permit the charging of increased fares when other means of relief have failed. Mr. Beeler said:

"Many companies are now operating at a loss and face bankruptcy. Disaster confronts the industry unless something is done. Public service will be paralyzed. In many cases all possible economy measures have been introduced and still receipts are falling behind expenditures. In such cases authority to raise fares should be given.

"There should be a readjustment of all street railway taxes and some taxes should be abolished. Jitneys should not be allowed to compete with traction concerns where adequate service is furnished. Business concerns should stagger their hours for employment. Finally, efficient co-operation should be developed among employees.

COMPARISON OF REVENUES AND EXPENSES OF ELECTRIC RAILWAYS MAY, 1918 AND 1917

Account	United States				Eastern District				Southern District				Western District			
	Amount, May, 1918	Per Mile of Line 1918	Per Mile of Line 1917	% Increase Over 1917	Amount, May, 1918	Per Mile of Line 1918	Per Mile of Line 1917	% Increase Over 1917	Amount, May, 1918	Per Mile of Line 1918	Per Mile of Line 1917	% Increase Over 1917	Amount, January, 1918	Per Mile of Line 1918	Per Mile of Line 1917	% Increase Over 1917
Operating revenues	$14,894,753	$2,060	$1,946	5.86	8,844,971	$1,869	$1,773	5.41	$1,364,887	$1,681	$1,501	11.99	$4,684,895	$2,780	$2,631	5.66
Operating expenses	10,075,107	1,394	1,264	10.28	6,109,555	1,291	1,164	10.91	837,499	1,031	886	16.37	3,128,053	1,856	1,715	8.22
Net earnings	4,819,646	666	682	†2.35	2,735,416	578	609	†5.09	527,388	650	615	5.69	1,556,842	924	916	0.87
Operating ratio, per cent	1918, 67.67; 1917, 64.95				1918, 69.07; 1917, 65.65				1918, 61.33; 1917, 59.03				1918, 66.76; 1917, 65.18			
Average number of miles of line	1918, 7,229; 1917, 7,095				1918, 4,732; 1917, 4,672				1918, 812; 1917, 756				1918, 1,685; 1917, 1,667			
COMPANIES REPORTING TAXES																
Operating revenues	$10,322,043	$1,983	$1,881	5.42	$5,391,527	$1,605	$1,520	5.59	$643,946	$1,945	$1,716	13.34	$4,286,570	$2,831	$2,712	4.39
Operating expenses	7,107,484	1,366	1,273	7.31	3,834,445	1,142	1,071	6.63	402,079	1,215	996	21.99	2,870,960	1,896	1,779	6.58
Net earnings	3,214,559	617	608	1.48	1,557,082	463	449	3.12	241,867	730	720	1.39	1,415,610	935	933	0.21
Taxes	716,423	138	128	7.81	368,647	110	101	8.91	50,747	153	141	8.51	297,029	196	182	7.69
Operating income	2,498,136	479	480	†0.21	1,188,435	353	348	1.44	191,120	577	579	†0.35	1,118,581	739	751	†1.60
Operating ratio, per cent	1918, 68.89; 1917, 67.68				1918, 71.15; 1917, 70.46				1918, 62.47; 1917, 58.04				1918, 66.97; 1917, 65.60			
Average number of miles of line	1918, 5,204; 1917, 5,122				1918, 3,359; 1917, 3,300				1918, 331; 1917, 326				1918, 1,514; 1917, 1,496			

† Decrease.

Best Year Ever

W., B. & A. Revenues Show Remarkable Gain of 65 per cent for 1917 From War Traffic

Unlike most interurban railways throughout the country, the Washington, Baltimore & Annapolis Railroad during the calendar year 1917 showed the best year in its history. The patronage between the terminal cities, as well as between local points, exhibited a decided increase. During the year 385,000 more passengers were carried between Baltimore and Washington than during the preceding year. This was an average increase of 1050 passengers per day.

The company's gross revenues at $1,560,125 represented a gain of $613,922 or 64.9 per cent over those for 1916. The largest preceding increases had been around 11 per cent in 1912 and 1916. Since 1909 the revenues have risen 154.8 per cent. The detailed results for the last two years are given in the accompanying statement.

Comparative earnings statistics for the last three years follow:

	1917	1916	1915
Per car-mile (cents)	8.98	42.53	40.47
Per mile of single track	$15,175	$9,545	$8,550
Per mile of road	$28,380	$17,220	$15,390
Per passenger (cents)	38.68	37.56	35.97

In July, 1917, the United States government began the construction of one of its army cantonments at Admiral, Md., approximately 2 miles west of Naval Academy Junction. This cantonment is now known as Camp Meade, and occupies approximately 9700 acres, 4100 of which are located north of the track and used for camp quarters, parade grounds, etc., and 5600 acres of which are located south of the track and used for maneuvering purposes. The land was leased from the owners by the railway through its subsidiary, the Terminal Real Estate Company, which latter company subleased it to the United States government.

In order to take care of the travel incident to Camp Meade, it was necessary to construct 5 miles of additional track to provide double-track facilities between Naval Academy Junction and the center of the camp. The company also constructed two large stations.

During the year the company added to its equipment eight modern, high speed Westinghouse electric locomotives and fifty-four modernly equipped trail cars. On account of the increase in rolling stock it became necessary to enlarge the carhouse facilities, and the board of directors authorized the construction of a modern brick and concrete paint and carpenter shop at an expenditure of $35,000.

The growth of the freight business kept pace with that of the passenger, so that, like the passenger terminal in Baltimore, the freight terminal is now seriously congested. The directors have had under consideration the desirability of combining the terminals on one plot of ground, a portion of the land for which has already been purchased.

During the last year Congress authorized additions to the Naval Academy buildings at Annapolis costing $3,500,000 to provide for an increase in attendance at the academy of 1000 naval students, which is about 100 per cent more than the number previously enrolled. This will result in still further increases in freight and passenger business to Annapolis.

COMPARATIVE INCOME STATEMENT OF WASHINGTON, BALTIMORE & ANNAPOLIS RAILROAD FOR CALENDAR YEARS 1916 AND 1917

	1917 Amount	1917 Per Cent	1916 Amount	1916 Per Cent
Railway operating revenues	$1,560,125	100.0	$946,202	100.0
Railway operating expenses	738,596	47.3	511,616	54.1
Net revenue from railway operations	$821,529	52.7	$434,586	45.9
Net revenue from auxiliary operations	25,574	1.6	12,680	1.3
Net operating revenue	847,103	54.3	447,266	47.2
Taxes assignable to railway operations*	129,057	8.3	50,934	5.4
Operating income	718,051	46.0	396,332	41.8
Non-operating income	12,893	0.8	13,340	1.4
Gross income	730,944	46.8	409,672	43.2
Deductions from gross income	268,293	17.2	262,578	27.6
Net income	462,651	29.6	147,094	15.6

*This includes income and excess profit taxes.

Favors Washington Merger

John A. Beeler, traffic adviser to the Public Utilities Commission of the District of Columbia, long favoring a consolidation of the two electric railway systems of Washington, has taken the position that such a consolidation is now looming up as imperative, from practically every point of view. The rapidly diminishing man-power in the industrial world, due to army needs; financial considerations of first moment; the serving of the public by careful utilization of available man-power, thereby getting a maximum of efficiency from a minimum of men and track equipment—all demand, Mr. Beeler holds, the utmost effort for consolidation. Some time ago the movement toward the unification of the railway systems of the District was accelerated by the appointment of committees from both the Washington Railway & Electric Company and the Capital Traction Company to confer with a view of devising a plan of closer co-operation or unified or single management to be submitted to the Public Utilities Commission of the District and to the boards of directors of the companies.

Interurban Revenues Rise

Higher Operating Costs of Illinois Traction System, However, Cause Reduction in Net

Each department of the Illinois Traction System, Peoria, Ill., during the calendar year 1917 showed an increase in gross revenues over the results of the preceding year. The interurban lines showed up particularly well with a gain of $616,059, or 15.4 per cent. The city lines, however, secured an increase in revenue of only $87,245 or 2.8 per cent.

The gains in gross were more than offset by the increases in operating expenses and taxes, for while the gross revenues rose $1,474,423 or 11.7 per cent the expenses and taxes increased $1,659,379 or 22.1 per cent. As a result the gross income fell off $184,955 or 3.6 per cent. The fixed charges increased, and the amount which was available for depreciation and dividends was $1,172,152 for 1917 as compared to $1,473,232 in 1916.

On the interurban lines increases in various rates, and particularly in rates on coal, grain and industrial switching, were made effective. The resulting increased revenue, with the additional tonnage handled which amounted to 24.55 per cent, was a substantial contributing factor in the total increase shown for the interurban department.

INCOME STATEMENT OF THE ILLINOIS TRACTION SYSTEM FOR CALENDAR YEARS 1916 AND 1917

	1917 Amount	1917 Per Cent	1916 Amount	1916 Per Cent
Interurban lines	$4,609,898	32.8	$3,993,836	31.8
City lines	3,198,056	22.8	3,110,811	24.7
Gas	1,035,169	7.4	923,642	7.4
Electric	4,295,501	30.6	3,689,851	29.4
Heat	383,092	2.7	341,379	2.7
Water	15,151	0.1	14,476	0.1
Miscellaneous	504,004	3.6	492,450	3.9
Total gross revenues	$14,040,870	100.0	$12,566,477	100.0
Operating expenses and taxes	9,149,176	65.1	7,489,797	59.6
Gross income	$4,891,694	34.9	$5,076,649	40.4
Interest on bonds, etc.	3,719,541	26.5	3,603,417	28.7
Net income	$81,172,153	8.4	$1,473,232	11.7

The additional cost of steam coal was $456,011. The increased labor expense was $316,679. The increase in taxes, including the new federal taxes, was $285,473. These three items, therefore, represented an increase of $1,058,164 in expenses over last year.

Bridge Line Ordered Removed

County Commissioners of Tom Greene County at San Angelo, Tex., have ordered the sale of the rails across Chadbourne Viaduct in that city. These rails are owned by the Texas Electric Light & Power Company, a Strickland property. They have never been used, as the company claims it is impossible at this time on account of the war to get materials necessary to complete the line. The commissioners entered their order when the company refused to bear its share of paving across the viaduct.

Financial News Notes

Virginia Company Changes Name.—The Blue Ridge Light & Power Company, Staunton, Va., has filed for record a change in its name to the Shenandoah Traction Company.

Texas Line Files Capital Increase.—The Rio Grande Valley Traction Company, El Paso, Tex., has filed an amendment to its charter in the office of the Secretary of State at Austin increasing its capital stock from $300,000 to $500,000.

Kansas Road Suspends.—The Iola (Kan.) Electric Railroad, running between Iola and La Harpe, has ceased operations at least for the present. Owing to the fuel and labor shortages the receiver of the road, Louis E. Lanigan, decided that it was best to suspend. The company operates 10½ miles of road.

Receiver for Ohio Road.—Charles J. Finger was appointed receiver of the Columbus, Magnetic Springs & Northern Railway, Richwood, Ohio, on Aug. 24, by the Court of Common Pleas of Delaware County, Ohio. All claims due on account of the railway should be properly enumerated and forwarded to the receiver on or before Sept. 10.

Woodstock-Sycamore Line Sold.—W. J. Fulton, master in chancery, has sold the property of the Woodstock-Sycamore Traction Company, Sycamore, Ill., at auction, realizing $119,850. The road extends from Sycamore to Genoa and Marengo, a distance of 25 miles. The rails and ties will be sold as junk. The buyer was the Hyman-Michaels Company, Chicago, Ill.

Road Being Dismantled.—The tracks of the New Jersey Rapid Transit Company running through Sea Isle City, N. J., which have not been used for the past two seasons, are being taken up and the rails will be shipped to France. A number of unused sidings and switches along railroad lines will also be removed and similar disposition made, together with all the extra rails not in use. Ties are also to be removed. Those unfit for relaying will be used to make charcoal.

Want Present Receiver to Continue.—Eastern creditors of the St. Petersburg & Gulf Railway, St. Petersburg, Fla., seeking to foreclose on a mortgage given to cover bonds, have instructed their attorneys in Tampa to insist that Charles M. Allen continue as receiver. At a conference of the creditors and their attorneys in Jacksonville recently it was urged that the foreclosure suit should be filed at once and that Mr. Allen had best not act as receiver for both the St. Petersburg Investment Company and the railway. Now the Eastern creditors want Mr. Allen to continue as receiver pending final judgment providing for the sale of the railway property.

Respite for Bowling Green Company.—When the motion to appoint a receiver for the Southern Traction Company, Bowling Green, Ky., which had been made by City Attorney Guy H. Herdman, acting for the city of Bowling Green and the County of Warren, was argued before Judge Moss, J. S. Lewis, president of the company, agreed to have the cars in operation within two days and the court granted him that time, with the understanding that unless the agreement was complied with the case would be heard. Recently the court ordered that the company repair its wires and cars, as it was claimed that their condition jeopardized the safety of the public. The company agreed to make the repairs, but had not done so, nor has it operated any cars since that time. The suit for a receiver was brought to force the operation of the cars.

Will Offer Monongahela Valley Bonds.—The National City Company, New York, N. Y., expects to offer for subscription $5,500,000 five-year, 7 per cent general mortgage bonds of the Monongahela Valley Traction Company, Fairmont, W. Va., at 97 and interest, to yield slightly more than 7¾ per cent. The company operates a system of urban and interurban electric railways in West Virginia and Ohio consisting of more than 177 miles of track. It also does the entire electric and gas business in a number of cities and towns, and owns valuable coal mining properties. The company has outstanding $8,288,861 of common stock, paying 5 per cent, and $3,431,730 of cumulative preferred stock, paying 6 per cent. The proceeds of the bonds now offered will be employed for the retirement of $2,829,000 one-year 6 per cent notes due on Feb. 1, 1919, and for the completion of a construction program.

City Line Being Torn Up.—The Tiffin, Fostoria & Eastern Railway is tearing up the rails at Riverview Park, Tiffin, Ohio, and the work will continue until all of the city tracks are removed. The company and the City Council were unable to come to terms on the operation of the city lines. The company claimed that an audit of its books showed that with fares at 5 cents straight the lines have been operated for a long time at a financial loss to the company. The company proposed to maintain a cash fare of 10 cents and sell six tickets for 45 cents. The council would not agree to this but had an ordinance drawn up providing for a cash fare of 8 cents and six tickets for 40 cents. The company refused to entertain this proposal. The section from Riverview Park to the Rock Creek bridge will be taken up first and after that portion is removed the work of tearing up the remainder of the line will begin at the park, up Huss Street to the line on Sandusky Street and through that portion operated in Highland. The interurban line will not be affected.

Electric Railway Monthly Earnings

COLUMBUS (GA.) ELECTRIC COMPANY

Period	Operating Revenues	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., June, '18	$95,152	*$38,130	$57,022	$32,681	$24,341
1m., June, '17	83,126	*31,987	51,139	28,977	22,162
12m., June, '18	1,178,395	*465,669	712,729	383,640	329,089
12m., June, '17	988,222	*373,889	614,333	342,303	272,030

EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEX.

1m., June, '18	$102,080	*$51,988	$50,092	$12,838	$37,254
1m., June, '17	80,026	*44,656	35,370	11,677	‡25,425
12m., June, '18	1,018,128	*562,238	455,890	150,701	‡326,293
12m., June, '17	895,313	*484,742	410,571	118,805	‡291,766

EL PASO (TEX.) ELECTRIC COMPANY

1m., June, '18	$96,236	*$69,198	$27,038	$6,865	$20,173
1m., June, '17	101,371	*66,845	34,526	4,653	29,873
12m., June, '18	1,272,064	*832,669	439,395	77,145	362,250
12m., June, '17	1,216,516	*774,451	442,065	60,447	381,618

HOUGHTON COUNTY TRACTION COMPANY, HOUGHTON, MICH.

1m., June, '18	$25,679	*$18,991	$6,688	$5,006	$1,682
1m., June, '17	27,758	*18,360	9,398	5,117	4,281
12m., June, '18	337,476	*219,327	118,149	60,591	57,558
12m., June, '17	340,082	*199,437	140,645	62,237	78,408

JACKSONVILLE (FLA.) TRACTION COMPANY

1m., June, '18	$60,984	*$47,264	$13,720	$16,502	†$2,782
1m., June, '17	55,516	*36,415	19,101	15,715	†3,386
12m., June, '18	781,551	*540,523	241,028	193,044	47,984
12m., June, '17	856,429	*441,399	215,030	186,754	28,274

NORTHERN TEXAS ELECTRIC COMPANY, FORT WORTH, TEX.

Period	Operating Revenues	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., June, '18	$259,162	*$165,336	$93,826	$65,655	‡$75,238
1m., June, '17	179,405	*112,192	67,213	29,126	38,087
12m., June, '18	3,078,818	*1,747,266	1,331,552	343,630	‡1,074,172
12m., June, '17	2,088,392	*1,227,416	860,976	349,248	511,728

PADUCAH TRACTION & LIGHT COMPANY, PADUCAH, KY.

1m., June, '18	$24,510	*$18,433	$6,077	$8,212	†$2,135
1m., June, '17	23,652	*17,236	6,416	7,472	†1,056
12m., June, '18	305,871	*228,136	77,735	77,735	†16,981
12m., June, '17	309,892	*225,693	84,199	87,119	†2,920

PENSACOLA (FLA.) ELECTRIC COMPANY

1m., June, '18	$42,732	*$26,200	$16,532	$8,103	$8,429
1m., June, '17	30,147	*15,893	14,254	7,729	6,525
12m., June, '18	417,518	*259,589	157,929	95,348	62,581
12m., June, '17	297,414	*172,588	124,826	93,007	31,819

SAVANNAH (GA.) ELECTRIC COMPANY

1m., June, '18	$96,677	*$65,253	$31,424	$24,784	$6,640
1m., June, '17	79,183	*51,578	27,605	24,040	3,565
12m., June, '18	1,071,436	*719,354	352,082	295,909	56,173
12m., June, '17	888,906	*587,338	301,568	286,324	15,244

TAMPA (FLA.) ELECTRIC COMPANY

1m., June, '18	$83,134	*$51,095	$32,039	$5,085	$26,954
1m., June, '17	78,234	*46,025	32,209	4,370	27,839
12m., June, '18	1,003,642	*583,089	420,553	60,699	359,854
12m., June, '17	997,737	*542,852	454,885	52,239	402,646

*Includes Taxes. †Deficit. ‡Includes non-operating income.

Traffic and Transportation

Rhode Island Wants More

Company There Files New Tariff After Central Five-Cent Zone Proves Inadequate

New schedules of rates have been filed with the Public Service Commission of Rhode Island by the Rhode Island Company, operating in Providence and other cities. The new rates would become effective on Sept. 15. The commission has announced an inquiry by it into the matter. The company is now charging 5 cents within a short central zone with an additional charge for rides outside.

A. E. Potter, president of the company, has addressed the following letter to Chairman Bliss of the commission.

"The zone system which was authorized by your commission, effective May 5, 1918, furnished some added revenue to the company. As compared with last year the increase in receipts for the month of May was 8.82 per cent and for the month of June 8.30 per cent. In July our general business was not so good as it was in July last year, due not only to unfavorable weather, but to the fact that many of our citizens between the ages of twenty-one and thirty where in the service.

Patronage Falls Off

"This, together with economies upon the part of others, due to the high cost of living, resulted in diminished patronage, particularly on lines to the pleasure resorts. These conditions were sufficient to offset any benefit derived from the zone system. Definite figures are not as yet available.

"The estimated income from the present zone system was based very largely upon the operating conditions for the year ended Dec. 31, 1917. Since that time operating conditions have been growing more and more unfavorable. For six months ended June 30, 1918, our gross revenue fell short by $256,647 of meeting our operating expenses, taxes and fixed charges.

"On May 18 it was necessary to make substantial increases in wages. These increases, it is estimated on the basis of hours worked last year, will amount to at least $300,000 per annum. As a little more than half of this amount will enter into our operating expense for the year ending Dec. 31, 1918, this increase for this year will amount to $150,000 in round figures.

"In addition to this the Providence Division, No. 618 of the Amalgamated Association has petitioned the National War Labor Board for an increase in wages, asking for platform men 60 cents an hour and similar increases for all other employees who are members of the association.

"The company has filed an answer to this petition with the War Labor Board, stating that it is in no financial position to pay any increase in wages whatsoever; but even if the wages are to remain the same as to-day, it is very evident that we shall have to pay more and more for material, and the indications are that under the conditions as outlined our operating expenses, taxes and fixed charges will exceed any gross that it is reasonable to expect by approximately $750,000 for the calendar year 1918.

"The tariffs which were filed to become effective Sept. 15, 1918, will, it is calculated, produce added revenue sufficient to meet our present and anticipated operating expenses and fixed charges. These estimates were made for the Rhode Island Company by Ford, Bacon & Davis."

Theodore Francis Green, one of the trustees under the decree in the New Haven dissolution case in which that company is required to dispose of its electric railway holdings, is reported to have said:

"I do not believe the people of the State want to see the property of the Rhode Island Company disintegrated. I do not believe they want to see the non-paying lines abandoned. I do not believe they wish the United Traction Company to be a factor in the local transportation situation again.

"But the only other possible solution is for the State to operate the system as a whole on the so-called 'service-at-cost' basis."

Freight on Cash Basis

The Ohio Electric Railway, Springfield, Ohio, has inaugurated a cash system for its freight business. No transportation charge will be allowed to run longer than three days and then it must be under a special arrangement.

In the ordinary run of business payment of prepaid charges is to be made to the forwarding agent when the goods are shipped, and payment of collect charges is to be made when freight is delivered.

For convenience in some cases, a one-day settlement basis will be used. When prepaid freight is received for shipment, the agent will at once mail the bill to the shipper. The same thing is done by the receiving agent when goods are shipped collect. In all cases checks must be mailed the next day.

The only plan that approaches a credit basis is where a period of three days is allowed for the settlement of bills, either prepaid or collect. Violation of the terms cancels the credit and shippers and consignees must file bonds if they wish to enjoy this privilege.

Six Cents for Denver

Mayor Expected to Sign Ordinance Passed by City Council—Interurban Increases Pending

The City Council of Denver, Col., on Sept. 3 passed the ordinance for a 6-cent fare on the city lines of the Denver Tramway. It was expected that the Mayor would approve the ordinance on Sept. 4. On that day the company went to hearing before the State Utilities Commission for similar action concurrently for an increase of rates on the interurban lines. Favorable action on this application is expected within a week.

Publicity Pays

The company has had its fare case before the public for some time. So effective was its campaign of public education through advertising that it had no trouble in securing in a couple of days 7600 names, or more than three times the number needed to initiate an ordinance. This petition for an ordinance regulating fares contained a bill which included in its provisions the following:

"The Denver Tramway shall be entitled to receive 6 cents and no more for a single passage on any line of the company's railway within the city and county of Denver; provided, that children under six years of age, when accompanied by a paying passenger, shall be carried free of charge, and children over six years of age and under twelve years of age at half fare, and the conductor in charge of each car shall at all times be provided with and have for sale tickets, both whole fare and half fare, to accommodate those wishing to purchase same.

"Sec. 2. That at the expiration of the war and at the time of the surrender to private management of the possession and control of the railroads taken over under the act of Congress passed the twenty-first day of March, 1918, and not to exceed one year and nine months following the date of the proclamation by the President of the United States of the exchange of ratification of treaties of peace:

Five Cents After the War

"The Denver Tramway shall be entitled to receive 5 cents and no more for a single passage on any line of the company's railway within the city and county of Denver; provided, that children under six years of age, when accompanied by a paying passenger, shall be carried free of charge, and children over six years of age and under twelve years of age at half fare, and the conductor in charge of each car shall at all times be provided with and have for sale tickets, both whole fare and half fare, to accommodate those wishing to purchase same."

Another section of the petition submitted to the Council said that the ordinance was necessary for the immediate preservation of the public health and public safety.

St. Louis Wants Zones

After Two Months of Six-Cent Fare, Company Asks Three-Zone System With Five-Cent Central Area

The 6-cent fare which went into effect on the city lines of the United Railways of St. Louis on June 1 is not producing sufficient revenue, and Richard McCulloch, president, has applied to the Missouri Public Service Commission for a test of a three-zone system with a minimum 5-cent fare in the central area. In the company's opinion, a further increase in unit fare would discourage short-haul traffic and involve a clumsy fare arrangement, while the zone system proposed is "fairest" and "entirely practicable."

On May 11, as previously recorded in this journal, the commission authorized a 6-cent fare in St. Louis but retained jurisdiction of the case, requiring the United Railways to make monthly reports and requesting that a study be made of the feasibility of a zone system.

Six-Cent Fare Inadequate

From experience with the 6-cent fare during June and July, it is evident to the company that the new rate does not carry out the intent of the commission, since it does not pay operating expenses and taxes, provide for an adequate replacement fund and earn a 6 per cent return on the investment. Using the results during June and July as a basis for forecasting the remainder of the year, and spreading three months' back pay of $350,000 (already paid) over the entire year, the city lines during the calendar year 1918 will show a deficit of $641,500 in earning a return of 6 per cent on $52,800,000, the figure assumed by the commission as the valuation of the city property. On the same basis, the county lines will show a deficit of $694,500 in earning a 6 per cent return on $7,200,000, the assumed valuation of the county property.

If the fare on the county lines were fixed at 2½ cents a mile, effective Oct. 1, 1918, as has been requested, the increase would be only $72,000 and the county deficit for the year would still be $662,500. If this county deficit is added to the city deficit on the theory that after establishing a reasonable rate of fare in the county the city lines should take care of the county deficit, the total deficit would be $1,264,000. To take care of this deficit, an additional charge of ½ cent per passenger would have to be made on the city lines. This estimate does not include probable increases in the cost of power, and probable increase in State and federal taxes.

Revenue Gain Is 14 per Cent

The 20 per cent increase in the city fare on June 1 resulted in a revenue gain of only about 14 per cent, and a loss of 4½ per cent of the passengers. The details are given in the accompanying statement. The company considers that the greater part of this loss is in short-haul traffic, partly on account of the increase in fare and partly on account of the annoyance of the clumsy 6-cent fare. A further increase in fare to 7 cents or perhaps 8 cents, the company avers, would drive away still more short-haul riders until a further increase in fares would yield no increase in revenue. Furthermore, a 6, 7, 8 or 9-cent fare is a clumsy arrangement, as it involves the use of two or more coins instead of one; and many passengers look upon it as really a 10-cent fare, as it leaves only a few pennies after the odd fare has been paid.

Zone System Is Entirely Practicable

The company believes that it should return to a minimum 5-cent fare, and that an endeavor should be made to adjust the other city rates of fare as far as possible in proportion to the length of ride. In outlining its plan the company says:

"Payments of fare on a strictly mileage basis would be out of the question, as it would involve too much accounting. The fairest method, and an entirely practicable method, of solving this problem, is the installation of a zone system on the city lines with a minimum fare of 5 cents, the other fares being adjusted equitably to provide sufficient revenue. If, after some experience, it should be found that the revenues needed further adjustment, the rates of fare in the second and third zones could be readjusted without change in the zone limits, or the zone limits might be changed, still maintaining the minimum 5-cent fare. The methods for the collection and accounting of fares would remain the same with any change in the rate of fare in the second or third zone.

"The rates of fare would be as follows: In any one zone, including free transfers in that zone, 5 cents. In two zones, including free transfers within two zones, the second rate of fare. In three zones, including the entire city, with free transfers to any part of the city, the third rate of fare.

"We believe that a practicable scheme can be worked out by which passengers may be handled under these new conditions as rapidly and satisfactorily, and the fares accounted for as thoroughly, as under present conditions. This system has many advantages over the present flat-rate system, in vogue in American cities. The short riders are taken care of at the minimum fare and the long rider pays for his ride somewhat in proportion to the cost of providing him with service. This system would also have a good effect in rehabilitating certain decayed portions of the city which have become depopulated on account of unreasonably long hauls now furnished by the company at the expense of those who ride only a short distance.

"It is difficult to predict the financial result of so radical a change. The zone system, first adopted, might produce insufficient revenues, or conversely. A test period of the system proposed should be sufficient to measure the influences on revenues, and provision should be made for a revision at the end of such test period."

EFFECT OF SIX-CENT FARE ON CITY LINES OF ST. LOUIS

	Two Months Ended July 31, 1917	Two Months Ended July 31, 1918	Per Cent Increase
City Lines Only:			
Passenger revenue.	$2,092,461	$2,394,650	14.45
Full fares.....	2,071,703	2,375,434	14.65
2½ cent fares....	20,757	19,216	*7.47
Revenue passengers	42,264,386	40,359,226	*4.52
Full fares.....	41,434,079	39,590,581	*4.46
2½cent fares....	830,307	768,645	*7.47
County Lines Only:			
Passenger revenue.	$121,105	$127,774	5.50
Revenue passengers	2,476,392	2,607,455	5.29
Full fares.....	2,367,813	2,498,744	5.53
2½ cent fares....	108,519	108,711	0.11
Entire System:			
Passenger revenue.	$2,213,566	$2,522,425	13.94
Revenue passengers	44,740,778	42,966,681	*3.97

* Decrease.

Appeals to Mr. McAdoo

International Railway Carries Its Increased Fare Case to the Director General of Railroads

Application has been made to Secretary William G. McAdoo, Director General of Railroads by the International Railway, Buffalo, N. Y., for the government to take over the lines of the company. As the result of the defeat of the company's efforts to collect a fare higher than 5 cents by the voters at the recent fare referendum, the railway is prevented from charging a higher fare within the city limits of Buffalo. In its application to the government, the company points out that it has through freight and passenger tariffs on its interurban lines and also operates part of its system in the Dominion of Canada and should therefore come under the jurisdiction of the Interstate Commerce Commission. The International Railway also operates over the lines of the Erie Railroad and also has through tariffs with other steam railways.

Buffalo Case Different

Secretary McAdoo is considering the Buffalo situation because it differs from other electric railways, especially in regard to operating across the International boundary line between the United States and Canada. Various legal phases of the problem have been left to the law department of the office of Mr. McAdoo, and after a decision is reached by this department action will be taken by the secretary. E. G. Connette, president of the International Railway, expects a decision will be made by Sept. 22. Various war industries of Buffalo have also petitioned the Director General of Railroads to intervene in the Buffalo case.

Chicago Asks Seven Cents

Application from Elevated Shows $2,447,000 as Estimated Increases in Cost for Year

Due primarily to the tremendous burden imposed by the recent wage award of the War Labor Board the Chicago Elevated Railroads on Aug. 30 filed application with the Public Utilities Commission of Illinois for permission to increase fares on all lines from 5 cents to 7 cents. New passenger tariffs were filed with the application and request was made that the applicants be permitted to "put in effect the schedule of rates on less than the notice required by statute."

Wages a Factor

The petition points out that on June 1, 1918, after voluntary negotiations, an agreement was entered into between the elevated railroads and Division 308 of the Amalgamated Association fixing the conditions of labor and rates of wages to obtain for a period of three years. This agreement provided for an average increase of 3 cents an hour in pay, or about 10 per cent, and applied to all classes in the transportation department and certain classes in the shops and maintainance of way department. The scale of wages thus fixed for trainmen ranged from 31 cents to 41 cents an hour. Due to the unforeseen and extraordinary increases in the cost of living the officials of the union on May 20, 1918, presented to the Mayor and the City Council a petition asking for indorsement of a request to the railway for a wage sufficent to meet living costs and in case the request was denied that the National War Labor Board establish such a wage.

The City Council gave its indorsement and a request was made for an increase in rates of wages of 15 cents an hour, or 40 per cent, over the rates established by the contract of June 1. The management of the elevated railroads while recognizing the fact that the contract of June 1 did not provide an adequate wage advised that with the present fare it was impossible to grant an increase. Application was then made to the National War Labor Board and the company submitted to the jurisdiction of the board. The Board made an award effective on Aug. 1 and for the period of the war fixing the wage scale for trainmen at 44 cents to 50 cents an hour and a minimum wage for other male employees of 42 cents an hour. The amount per annum of the wage increase is more than $1,647,000.

Exhibit of Costs Made

The application includes an exhibit showing the cost of electric railway materials and supplies in 1918 as compared with 1915. The total necessary increase in expenditures, including increased material cost, increased taxes, etc., is placed by the company at $2,447,000.

A consolidated income statement for the year ended July 31, 1918, and an estimated statement for the year ended July 31, 1919, is made a part of the application and shows a net loss of $1,752,413 for the latter year. It is stated that although the 7-cent fare would produce a theoretical increase in income of $3,896,370 the estimated increased revenue, due to a decrease of at least 4 per cent in traffic, would be not greater than $2,622,282 if the increase became effective as of Aug. 1, 1918. Exhibit "J," attached to the petition, shows the valuation of the elevated properties as of June 30, 1916, by the Chicago Traction & Subway Commission to be $70,400,916 at present value. Other items not included in this valuation but mentioned in the petition add $10,000,000 to $15,000,000.

The application includes letters of President Wilson and Messrs. McAdoo and Williams emphasizing the value of electric lines in the prosecution of the war and the financial difficulties under which they are now operating. Quotation is also made at length from the recommendation of the War Labor Board as to suggested fare relief for the elevated lines. Exhibit "K" includes a table showing the larger cities in which fare increases have been granted or are pending.

The issue of the ELECTRIC RAILWAY JOURNAL for Aug. 24 noted the request of the Chicago Surface Lines to the City Council for a recommendation so that a petition could be presented to the State Public Utilities Commission "for such an increase in fares as may be necessary to meet existing conditions." The Surface Lines operates under a partnership arrangement with the city and, therefore, wishes the cooperation of the city in its application to the commission. The Elevated Railroads operate under the State railroad act and thus come directly under the Public Utilities Commission.

Yonkers Wants More

A public hearing will be given by the Common Council of Yonkers, N. Y., on Sept. 9, on a petition filed by the Yonkers Railroad for the suspension of its franchise agreements and an increase in fares. The petition, signed by Leslie Sutherland, vice-president, asks that the Mayor and Common Council:

1. Suspend for the period of the war, and one year thereafter, the conditions in relation to rates of fare attaching to the lines of the Yonkers Railroad under any franchise or agreement.

2. Submit the matter of the rates of fare to be charged by the Yonkers Railroad to a determination of the Public Service Commission to increase such rate of fare.

The reason for making the request is that as a result of the war, the increased cost of labor and material makes it impossible for the company to operate cars in Yonkers and adjoining municipalities, according to franchise conditions, at a 5-cent fare.

Zone Studies Begun

Public Service Railway Organizes Special Department to Carry Out Order of New Jersey Commission

A special department has been organized by the Public Service Railway, Newark, N. J., to carry out the order of the Board of Public Utility Commissioners of that State that the company submit by Jan. 1 next "a plan whereby the method of charging now in force may be revised by an equitable zoning system over its entire territory."

Active field work in collecting necessary traffic statistics was started when men began riding the cars and asking passengers to fill out slips which will show the origin and destination of each ride. Every line in the entire system will be covered as speedily as possible and the data secured will be tabulated. So much work is involved, however, that it will be months before it is completed.

President McCarter Directing Work

Preliminary work has been under way ever since the commission's decision was accepted by the company last month. The task is regarded as of such importance that Thomas N. McCarter, president of the company, is personally directing it, he having designated a special committee consisting of General Manager R. E. Danforth, Assistant General Manager H. C. Donecker, General Solicitor L. D. H. Gilmour and General Auditor M. R. Boylan, with himself as chairman, to carry on the work. Dr. Thomas Conway, Jr., of the Wharton School of Finance, University of Pennsylvania, has been retained as a special expert.

A corps of sixty college students has been recruited to collect data. These young men will be supplied with blanks the use of which will, it is expected, enable the company to chart traffic on all lines in such manner as to enable it to lay before the commission the most comprehensive information covering the demands of service and the length of rides of those using the cars, that it is possible to obtain.

The most important phase of the work will consist of securing the basic data upon which any zoning system must be predicated, and as the company is acting under the direction of the commission, it is counting upon receiving the willing assistance of its patrons. All the passengers will be asked to do will be to write on blanks to be furnished them where their journey will end.

As the Essex division has the heaviest traffic, it has been selected as the territory for starting the field work. Other division will be taken up in order until the whole system is covered.

Public Service Needs More

U. S. Shipping Board Explains Vital Need of Adequate Electric Transportation in New Jersey

In connection with the new application of the Public Service Railway, Newark, N. J., for a 7-cent fare, as noted in the ELECTRIC RAILWAY JOURNAL of Aug. 31, several federal agencies presented petitions indorsing the company's plea. One of these, that of the Emergency Fleet Corporation of the United States Shipping Board, emphasized with considerable detail the vital interest of the nation in the continuance of adequate electric transportation.

Believing such action to be in the national interest, the Emergency Fleet Corporation requested the Board of Public Utility Commissioners of New Jersey to put into effect such a rate of fare as will provide the Public Service Railway with sufficient funds to pay its operating expenses and maintain its financial stability as a going concern, to the end that it may function at its maximum efficiency as a part of the war-making machinery. The petition was signed by A. Merritt Taylor, Director of Passenger Transportation and Housing, and approved by C. M. Schwab, Director General.

It was pointed out that the government is expending $2,317,105 in advances to the company for necessary additions and extensions to its facilities, and that the company's credit must be maintained in order to permit repayment at the proper time. Furthermore, the company is serving nearly 200,000 of war workers as shown in the accompanying list. For these reasons the petition concluded as follows:

"The transportation service of the Public Service Railway must, at all hazards, be preserved and further increased; the large loans of the United States to this company must be protected and secured; the prosecution of the shipbuilding program and the entire war program must not be delayed or hindered by legal restrictions on this company, which prevent it from earning a fair rate of return and meeting the unusual demands made upon it at this time by the government of the United States."

WAR INDUSTRIES SERVED BY PUBLIC SERVICE RAILWAY

Name	Location	Approximate Number of Employees	
Camp Merritt (one of the largest embarkation camps of the country)	Tenafly	30,000	soldiers
American Can Company	Edgewater and Elizabeth	4,000	employees
Aluminum Company of America	Edgewater	300	
General Chemical Company	Edgewater	700	
Remington Arms Company	Hoboken	2,200	
Crucible Steel Company of America	Jersey City and Newark	9,000	
American Radiator Company	Bayonne	1,000	
General Electric Company	Harrison	3,800	
Federal Shipbuilding Company	Kearny	7,000	
Foundation Company (wooden ships)	Kearny	3,500	
U. S. Army Engineers' Stores	Harrison	600	
Submarine Boat Corporation	Newark	16,000	ultimate
Butterworth-Judson Company	Newark	3,600	
U. S. Army Quartermaster's Station, Port Newark	Newark	3,000	
International Arms & Fuse Company	Newark	12,000	
Splitdorf Electric Company	Newark	1,600	
Balbach Smelting & Refining Company	Newark	1,000	
Thomas A. Edison Company, Inc	West Orange and Bloomfield	7,800	
Westinghouse Electric & Manufacturing Company	Newark and Bloomfield	6,000	
Weston Electrical Instrument Company	Elizabeth	1,000	
Dusenberg Motor Company	Elizabeth	1,000	
Standard Aircraft Corporation	Elizabeth and Plainfield	5,000	
F. S. Moore & Sons Shipbuilding Company	Elizabeth	1,800	
U. S. Army Raritan River Ordnance Depot	Bonhamtown	10,000	ultimate
Union Powder Company	Perth Amboy	3,500	
Parlin Works of the duPont Company	Perth Amboy	6,500	
Nixon Nitration Works	Bonhamtown	600	
Wright-Martin Aircraft Corporation	New Brunswick	4,500	
Standard Shipbuilding Corporation	Shooter's Island (Staten Island)	5,000	
Singer Manufacturing Company	Elizabeth	6,000	
Marconi Wireless Company	Roselle Park	1,000	
John A. Roebling's Sons	Roebling	2,500	
U. S. Army War Department Woodbury (bag filling plant)	Gloucester	5,000	
New Jersey Shipbuilding Company			
Pennsylvania Shipbuilding Company	Gloucester	7,000	
New York Shipbuilding Corporation	Camden	11,500	
Under Construction:			
Ford Motor Company (To build government patrol boats)	Newark	5,000	ultimate
Total		190,000	

Increase Fare One Cent

The application of the Jersey Central Traction Company, Keyport, N. J., for permission to increase its fares from 5 cents to 7 cents and charge 3 cents for each transfer was denied by the Board of Public Utility Commissioners on Aug. 31.

The board decided, however, that the company could file amended schedules providing for a war surcharge of 1 cent added to the 5-cent fare now charged and that transfers be given where they now are given. It was also decided that the new schedule of rates after being filed shall be published to the patrons of the company for three days by notices in the cars, and that the company shall use every endeavor to maintain its operating schedule, especially connections with trains used by the passengers.

The company bases its application on the ground that in 1917 the cost of maintaining and operating its system increased more than 50 per cent over 1916, and will still further increase this year.

It was estimated that the tariffs filed would give $92,000 additional income to the company.

Baltimore Increase Oct. 1.

Company There Facing Emergency—Files New Tariff While Awaiting Decision on Previous Appeal

The United Railways & Electric Company, Baltimore, Md., on Aug. 28 filed under the terms of the public service commission law, a revised schedule of rates effective on Oct. 1.

The necessity for taking such action prior to a decision on the petition of the company filed recently with the commission arose from the fact that before such a decision could be had a new increase of wages would go into effect; namely, on Sept. 1. This, apart from and in addition to the increased costs of material and maintenance, will further add to the company's expenses more than $700,000 a year. This increase, when added to the wage raises heretofore given in 1918, will, in the aggregate, place an additional burden of more than $1,700,000 a year on the company, over and above the wage scale existing in 1917, and $2,200,000 a year over and above the scale in 1915, based upon the present service. While the company's gross revenues have increased, such increases have fallen below the increased cost of service. Because of the competing wage rates of the war industries, the wage increases were necessary if the transportation service was to be maintained.

Briefly, the result of the new schedule of rates will be to add 1 cent to the fares now collected from adults, children and commutation tickets. The new rate will also take the place of the 3-cent transfers heretofore sold on certain lines.

The new schedule is of course subject to any action the commission may take on the petition for relief filed previously. It was thought at the time that the previous petition for an advance in rates was filed that the company would be able to stand the financial strain pending a hearing in due course.

Favors Fare Advance

A joint committee of members of the City Council and the Chamber of Commerce of Youngstown, Ohio, has recommended that the fare on the Mahoning & Shenango Railway & Light Company's lines be increased to 6 cents during the period of the war. The Council has submitted the following questions to the city solicitor:

1. Can the city of Youngstown legally pass an amended ordinance granting to the Mahoning & Shenango Railway & Light Company the right to charge a 6-cent fare during the continuance of the war with Germany and six months after the conclusion of peace, without invalidating the present franchise?

2. If this increase should pass would it invalidate the present franchise and when would it take effect?

3. If the present franchise would not be invalidated what legal assurance has the City Council to re-establish the present fare, at the end of the war?

Increase for Milford & Uxbridge Road

Increased fares with some modification from the tariff proposed by the company have been authorized by the Public Service Commission of Massachusetts in an order to the Milford & Uxbridge Street Railway. In August, 1917, the commission authorized the company to increase the unit of fare on all owned lines from 5 to 6 cents, to withdraw existing reduced-rate tickets and to substitute workingmen's tickets at the rate of twenty tickets for $1 good in all zones during certain hours only, in lieu of a cash fare, and to issue tickets good during all hours for ten continuous rides over the two fare zones between Holliston and Framingham.

Failing to realize the anticipated increase in revenue, the company filed a new schedule last June substituting for its present system of irregular and overlapping zones, averaging about 4 miles in length, a mileage zone system on all lines owned, similar to that recently approved for the Boston & Worcester Street Railway. Under this system the road is divided into sections about 1 mile in length and a rate of 2½ cents per zone with a minimum fare of 6 cents for a distance of three zones or less is established. On the leased line of the Medway & Dedham company, the existing fare zones are retained, but the present 5-cent fare unit is increased to 6 cents between Dedham and Medway and to 7 cents between Medway and Franklin. The 5-cent ticket rate through the sale of workingmen's tickets is retained in the proposed schedule, each ticket being good during the same hours in lieu of the proposed 6-cent minimum on all owned lines and in lieu of the 7-cent cash fare on Medway-Franklin line.

The finding rules that workingmen's tickets should be sold at the rate of eighteen for $1 and that tickets for nine continuous rides for $1 should be sold for local passengers between Framingham and Holliston or intermediate points, good only for the original purchaser or members of his family.

Missouri Commission Exceeded Authority

In a verbal decision on Aug. 31, Judge Slate of the Cole County Circuit Court held that the Public Service Commission of Missouri exceeded its authority in permitting the United Railways to charge a 6-cent fare in St. Louis.

The decision was rendered on the appeal to the court by City Counselor Daues, made last June. At the same time Judge Slate held that the Public Service Commission also had no right to grant a 6-cent fare in Kansas City.

Judge Slate's decision covered only one of two points raised by Attorney Daues, acting for the city of St. Louis, who contended that the Public Service Commission had no authority to overrule the contract between the city of St. Louis and the United Railways for a 5-cent fare, and also that a 6-cent fare was excessive. The latter question was not touched on by the court.

When Judge Slate announced his decision, Thomas E. Francis, attorney for the United Railways, and Clyde Taylor, attorney for the Kansas City Railway, were in court. Mr. Francis said the United Railways would apply for a writ of supersedeas, and would offer to file a bond with the court to keep the 6-cent fare in effect until the case could be heard on appeal in the State Supreme Court.

Railway and Stores Co-operate

The Birmingham Railway, Light & Power Company, Birmingham, Ala., awakened to the need of reducing the rush-hour peak, published a series of advertisements on the subject. Aside from the value of the advertisements as such to the company they presented a point of view that immediately won the indorsement of the department stores. In fact, six or seven of the largest stores in Birmingham co-operated with the railway by running in their advertisements an appeal to their customers to finish their shopping by 5 o'clock so that the workers could go to their homes without being crowded by shoppers. One store, Loveman, Joseph & Loeb, in its advertisements said:

"Congratulations, Birmingham Railway, Light & Power Company, on your public spirited attitude of encouraging the customer to shop early."

The store followed this up with a series of editorials in its advertisements commenting further on the efforts of the company.

Louis Pizitz, another large department store in Birmingham, the Burger Dry Goods Company, J. Blach & Son, Goldstein Brothers, Louis Saks and others, also preached "shop early" in their ads.

Columbus Case Up Sept. 5

Federal Judge Sater announced that the case of the city of Columbus, Ohio, against the Columbus Railway, Power & Light Company would be heard before Judge A. M. J. Cochran of Maysville, Ky., in Cincinnati on Sept. 5. Judge Cochran planned to hold court in Covington, Ky., at that time, but announced that he would go to Cincinnati, just across the river, to hear the Columbus case, which relates to the action taken by the railway in increasing its rate of fare.

As noted briefly in the ELECTRIC RAILWAY JOURNAL of Aug. 24, page 350, the company, after having tried for months to induce the City Council to grant a fare increase, served notice of a fare of 5 cents, with 1 cent for each transfer and no rebate. At the same time the company declared its intention to surrender its franchise, and a little later filed suit in the Federal Court to enjoin interference with the operation of its cars. The franchise was surrendered on the ground that it had become confiscatory and deprived the company of its property without due process of law, the company basing its action on the fourteenth amendment to the Constitution of the United States. In the action before the courts the company is seeking to enjoin the city from attempting to enforce the franchise.

Transportation News Notes

Fare Hearing Adjourned.—Chairman Hill of the Public Service Commission for the Second District of New York has adjourned to Sept. 16 the hearing on the petition of the International Railway for a 6-cent fare in the city of Lockport.

Would Return to Federal Rates.—The Salt Lake & Utah Railroad, Salt Lake City, Utah, has appealed to the State Public Utilities Commission again to raise its rate of fare to the schedule adopted when the road assumed that it was under government control.

Montgomery Would Charge Seven Cents.—The Montgomery Light & Traction Company, Montgomery, Ala, has asked for permission to increase fares from 5 cents to 7 cents. The request was made to the City Commissioners, who have taken the matter under advisement.

Investigation at Akron.—Tentative arrangements have been made by the city of Akron, Ohio, with William J. Hagenah, Chicago, Ill., to make a survey of railway conditions in that city with reference to the increase in the rate of fare that has been requested by the Northern Ohio Traction & Light Company.

San Antonio Wants More.—A 6-cent fare or a fare of 5 cents with the abolishment of the transfer system is sought by the San Antonio (Tex.) Public Service Company. Formal application for permission to change the fare was filed with the City Commission recently, over the signature of E. N. Kifer, second vice-president of the company.

P.A.Y.E. for Indianapolis.—The Indianapolis Traction & Terminal Company, Indianapolis, Ind., will make all of its cars pay as you enter, if it gets an increase in the rate of fare sufficient to enable it to do so. Twenty-five pay-as-you-enter cars have been added to the system. It will cost $150,000 to add the pay-as-you-enter feature to the more than 500 cars owned by the company.

Excess Fare Certificate Ordered.—The Conestoga Traction Company, Lancaster, Pa., has been ordered by the Public Service Commission to issue certificates of excess fare to all its

patrons and to post notices to this effect in its cars. On Aug. 2, the company raised its fares from 5 cents to 6 cents, and a complainant asked the commission to order the issuance of the certificates.

Long Island Road Increases Wages.—A second increase in wages within the last three months has been granted to the employees of the New York & Long Island Traction Company, Hempstead, N. Y. The latest increase went into effect during the week ended Aug. 30. It ranges from 37½ cents an hour for beginners to 43 cents an hour for employees who have been in continuous service for five years or more.

Scranton-Binghamton Line Increases Fares.—Fares on the Scranton & Binghamton Railroad, Scranton, Pa., will be increased on Sept. 15, according to a schedule of rates and tariff filed with the Public Service Commission of Pennsylvania. The increase affects zones in and out of Scranton, the minimum in Scranton being advanced from 6 to 8 cents, while one-way, round-trip and commutation rates for points over the entire system have also been changed.

Wants Jitneys Regulated.—McCarter & English, representing the Atlantic Coast Electric Railway, have complained to the City Commissioners of Asbury Park, N. J., that the State and local laws regulating the operation of jitneys were not being enforced. Mayor Hetrick has asked the Board of Public Utility Commissioners to make an investigation of the company's complaint and report the same to the City Commission. The City Commission contends that the jitneys are necessary when the railway service fails.

Progress Slow in Memphis.—The City Commissioners of Memphis, Tenn., at a recent session declined to act on the plan advanced by T. H. Tutwiler, president of the Memphis Street Railway, and Charles M. Bryan, attorney for the company, to have the 6-cent fare ordinance prepared, published and brought before the members while the merits of the company's claim were still being threshed out. On the other hand, the commission voted to refer the matter to Lee Goodman, commissioner of public utilities, with instructions to investigate and report back.

New Fast Freight Service.—The Northern Ohio Traction & Light Company, Akron, Ohio, arranged for the operation of a new fast package freight service to connect Cleveland, Akron, Barberton, Wadsworth, Canton, Massillon, Dover, New Philadelphia and Uhrichsville, beginning on Sept. 1. Sixteen freight cars were to be used in the beginning and others are to be added as needed. Dry goods, hardware and boxed merchandise will be handled, but it is believed that the inauguration of the service will also make it possible to ship more farm produce to Cleveland and the other cities than in the past.

Increases for Eastern Wisconsin Company.—The Eastern Wisconsin Electric Company, Sheboygan, Wis., has been authorized by the Railroad Commission of Wisconsin to increase fares on the interurban line operating between Sheboygan and Elkhart Lake, from a ticket rate of 1.9 cents, to 2.9 cents per mile. Increases of practically this same amount have been authorized on the interurban lines of the company between Fond du Lac and Oshkosh, Oshkosh and Neenah, and Oshkosh and Omro, and an increase in the fare from Fond du Lac to North Fond du Lac from 5 cents to 10 cents has also been auauthorized.

Some Recent Pennsylvania Fare Changes.—The Lehigh Valley Transit Company, Allentown, Pa., and the Philadelphia & Western Railway, Upper Darby, Pa., have filed a joint tariff with the Public Service Commission making increases in one-way fares and other rates. The Lehigh Valley Transit Company also has announced 6-cent fares per zone and creation of new zones. The Hanover & McSherrystown Street Railway has gone to a 6-cent fare; the Stroudsburg Traction Company announces changes in rates, while the Easton Transit Company increases regular fares to 6 cents and increases special car fares.

Protest Reduction in Buffalo Service.—A protest has been filed with the Public Service Commission of the Second District by several of the big war industries of Buffalo against the International Railway abolishing all-night car service on all except six of its city lines. This curtailment of owl service, the complaint sets forth, interferes with the transportation of workmen to and from the plants engaged on war work and seriously interferes with early morning travel, as the first morning runs do not start from the carhouses until 5 a. m. Many of the city's car lines are without service until after this time in the morning.

Houston Wants Seven Cents.—The Houston (Tex.) Electric Company will apply to the City Commission for a 7-cent fare, according to David Daly, general manager, in an address before employees of the company. The company recently made application for a 6-cent fare, and the City Commission employed Lamar Lyndon to examine the company's books. In his report Mr. Lyndon said the company had been making sufficient return on its investment and would make ample return this year. Upon this report the City Commission denied the application for a 6-cent fare, but the company asked for a rehearing before the commission. The matter is still pending.

Traffic Survey in Connecticut.—The Connecticut Company, New Haven, Conn., which is now charging a 6-cent fare, is planning to conduct a traffic survey on all of its lines in the State. It will be conducted by college students and others who will ask patrons to answer the usual questions of point of origin and destination. The purpose of the survey is to determine the direction of the present traffic with a view to rerouting and possible fare changes. The survey will be made first on the parts of the system where there is comparatively little summer traffic so as to leave the other lines until later in the year when they will have returned to their standard nine-months' conditions.

Albany Results Disappointing.—According to Harry B. Weatherwax, vice-president of the United Traction Company, Albany, N. Y., the 6-cent fare is not bringing in sufficient revenue to pay the increased expenses of operation due to the raise in pay granted the employees by the War Labor Board. When the increased fare had been in effect a week Mr. Weatherwax was quoted by the Albany *Journal* as stating: "The increase in revenue has been about 10 per cent; we had expected 20 per cent. In fact, the first day's operation showed an increase of only 6 per cent, which rose to 8 per cent on the second day. The three last days of operation showed an increase of about 10 per cent in the amount of the receipts."

Council Favors Fare Increase.—As the result of a petition addressed to the City Council of Galesburg, Ill., in which the company asked that the Council as a whole or by a special committee investigate the condition of the Galesburg Railway & Light Company, go over its books and take some steps either to allow the reduction of expenses or an increase of revenue, a resolution has been passed by the City Council recommending that the company be allowed to advance rates. The application will seek to establish 7-cent single fares, four tickets for a quarter and ten for 60 cents, these rates being suggested in the report of the Council special committee. The application of the company to the Public Utilities Commission for permission to increase fares will accordingly go to that body with a recommendation in its favor from the Council.

Six Cents in Salt Lake.—The Utah Light & Traction Company, Salt Lake City, Utah, has been authorized by the State Public Utilities Commission to charge a cash fare of 6 cents and to sell tickets in strips at the rate of twenty for $1. An estimate made by the commission places the annual increase of income on account of the present order at $134,643, the assumption being that 40 per cent of the passengers carried will pay 6 cents for each fare and not purchase rides at the commutation rate. The increase estimate is based on the traffic of last year. H. F. Dicke, manager of the company, is reported to have said: "The decision is a disappointment to us. We asked for a 6-cent fare with a 5½-cent commutation ticket. According to our closest calculations this will be necessary to offset the $89,000 annual wage increase which went into effect on May 1." In December last the commission handed down a decision authorizing the company from Jan. 1 to discontinue the sale of 4-cent commutation tickets and to charge a straight 5-cent fare.

Personal Mention

S. W. Baker has been appointed purchasing agent of the Cripple Creek & Colorado Springs Railroad, Colorado Springs, Col., to succeed John F. Esch.

R. A. Clark, formerly treasurer of the Waterbury & Milldale Tramway, Waterbury, Conn., has been elected second vice-president of the company.

C. E. Bostwick, Jr., has been appointed purchasing agent of the Jacksonville Traction Company, Jacksonville, Fla., to succeed F. M. Martzall.

H. G. Mechan has been appointed chief engineer of the Cripple Creek & Colorado Springs Railroad, Colorado Springs, Col., to succeed M. J. Burgdorf.

O. E. McCormick, formerly assistant secretary of the Middle West Utilities Company, Chicago, Ill., has been appointed assistant treasurer of the company.

Lee M. Reely, who has been welfare superintendent of the United Railways & Electric Company, Baltimore, Md., has entered the United States Naval Reserve Force.

J. W. Dawson, formerly inspector and instructor with the Denver (Col.) Tramway, has joined the instruction department of the Washington Railway & Electric Company, Washington, D. C.

J. H. Ridgely, superintendent of the food depot of the United Railways & Electric Company, Baltimore, Md., since its establishment, has been designated to direct the welfare work of the company, and has assumed the duties of that position.

A. R. Marshall, formerly secretary of the Trinidad Electric Transmission Railway & Gas Company, New York, N. Y., has accepted a position with the Hemphill Manufacturing Company, Pawtucket, R. I., manufacturer of the Banner automatic knitting machines, as assistant secretary and assistant treasurer.

M. J. McDonough, chairman of the central safety committee of the United Railways & Electric Company, Baltimore, Md., has been named to succeed J. H. Ridgely at the food depot of the company. Mr. McDonough will not discontinue his safety work, the scope of which has been so widely extended under his direction, but will undertake to handle both positions.

C. Nesbitt Duffy, vice-president and general manager of the Manila Electric Railroad & Light Corporation, Manila, P. I., and president of the Manila Merchants' Association, was the moving spirit and organizer of an excursion of Manila business men to important cities in the Islands early this summer. Among the cities visited were Ilo Ilo, Zamboanga, Isabela, Jolo, Cebu and San Carlos.

John R. Davies was appointed assistant to the president of the Philadelphia (Pa.) Rapid Transit Company, effective on Aug. 31. Mr. Davies has been connected with the system in Philadelphia since 1911. He was born in Utica, N. Y. His first railroad experience was obtained during 1893-1894 in Chicago with the World's Columbian Exposition as chief clerk to the superintendent of transportation, handling all foreign and domestic exhibits before the opening of the exposition, during its operation and at the close of the World's Fair. He was paymaster and general timekeeper during the construction of the Wisconsin & Michigan Railroad in 1894. He entered the service of the Chicago (Ill.) City Railway in

J. R. DAVIES

1895 and worked in the transportation, mechanical, purchasing and stores department until appointed purchasing agent in 1909. In 1911 he went to Philadelphia from Chicago with T. E. Mitten, president of the Philadelphia Rapid Transit Company, assisting Mr. Mitten in the development and purchase of 1500 near-side cars for the Philadelphia system. In 1912 he was appointed manager of Willow Grove Park and the turnpike under control of the Philadelphia Rapid Transit Company. Mr. Davies is a member of the Rotary and Poor Richard Club and has assisted many committees in bringing important conventions to Philadelphia and in the entertainment of thousands of visitors in the famous Willow Grove Park in that city.

Robert V. Prather, former secretary of the Illinois Public Utilities Commission, at a joint meeting of the Illinois State Electric Association and the Illinois Electric Railways Association, held in Chicago on Aug. 16, was elected joint secretary of the two associations, effective from Sept. 1. Mr. Prather will devote his entire time to the two associations. The headquarters of the associations will be located at rooms 304 and 306 DeWitt Smith Building, Springfield, Ill. Mr. Prather has been secretary of the Public Utilities Commission for the last five years, having been appointed by Governor Dunne a few weeks after the organization of the commission on Jan. 1, 1914. Mr. Prather served through the administration of Governor Dunne and was reappointed secretary by Governor Lowden on July 1, 1917. Prior to his connection with the Public Service Commission of Illinois, Mr. Prather was Western solicitor for a large New York brokerage house.

Obituary

John Edward Bunker, a member of the Public Utilities Commission of Maine, is dead. Mr. Bunker was born in Trenton, Me., in 1866. He was graduated from Boston University in 1892 and was admitted to practice before the Hancock County Bar in October, 1892. Shortly thereafter he opened an office in Bar Harbor. During the administration of Governor Curtis Mr. Bunker was Secretary of State. In 1916 he was a Democratic candidate for Congress in the third district. He was appointed to the Public Utilities Commission last year by Governor Carl Milliken.

Elbert B. Peck, vice-president and comptroller of the Indianapolis Traction & Terminal Company and the Terre Haute, Indianapolis & Eastern Traction Company, died at his home in Indianapolis, Ind., on Aug. 24. Mr. Peck had been ill for about eight months. He was born at Machias, N. Y., in 1860 and was educated in the common schools of New York State. During his early business career Mr. Peck moved to Kansas City, Mo., where he was associated with the Barber Asphalt & Paving Co. In 1899 he became associated with the late Hugh J. McGowan and went to Indianapolis with him where he gained his first electric railway experience, acting as private secretary to Mr. McGowan. In 1900 Mr. Peck was appointed manager of the Broad Ripple Traction Company and when the street railway systems of Indianapolis were consolidated, Mr. Peck had charge of the construction of the terminal building and stations. In 1907 he was elected vice-president and comptroller of the Indianapolis Traction & Terminal Company and also of the Terre Haute, Indianapolis & Eastern Traction Company, which position he held at the time of his death. Mr. Peck was very active in the work of the Central Electric Railway Association and was president of that association in 1911. Funeral services were held in Indianapolis. Interment was at Adrian, Mich.

Construction News

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

Franchises

Portland, Ore.—The Kenton Traction Company has asked the City Council of Portland for a twenty-five-year franchise to operate its cars over the Derby Street approach to the Interstate Bridge.

Track and Roadway

Petaluma & Santa Rosa Railway, Petaluma, Cal.—Plans for the reorganization of the Petaluma & Santa Rosa Railway, by which the properties ordered sold at foreclosure will be acquired by a new corporation, have been approved by the Railroad Commission of California.

Belt Line Railroad, San Francisco, Cal.—Electrification of the Belt Line Railroad in San Francisco, Cal., has been decided upon by the State Board of Harbor Commissioners, under whose jurisdiction the line operates. The Belt Line runs along the waterfront connecting the various piers with the several railroads that enter San Francisco.

United Railroads of San Francisco, San Francisco, Cal.—To improve the present transportation system and for the convenience of the men employed at the Union Iron Works, the United Railroads of San Francisco is constructing a pay-as-you-enter station and loop system at Eighteenth and Kentucky Streets. The new station will include six tracks in the loop and will, it is believed, handle the full force of the works without delay or congestion.

Stockton (Cal.) Electric Railway.—Work has been begun by the Stockton Electric Railway on the reconstruction of its lines on South San Joaquin Street through the Homestead district. The cost of the work is estimated at $30,000.

Connecticut Company, New Haven, Conn.—The Connecticut Company has borrowed through the United States Housing Corporation approximately $1,350,000, at interest, to provide funds for constructing tracks to take care of munition workers in the city of Bridgeport and to purchase one-man safety and other cars as announced elsewhere. The title to the cars and additional track facilities will remain in the housing corporation's name until full payment has been made by the company. The exact location and dimensions of this track work have not yet been definitely decided upon, but one of the plans contemplates double-tracking a street parallel to the main street which is greatly congested, and the building of a terminal station with the necessary loops and through tracks reasonably near the center of the city.

New York, New Haven & Hartford Railroad, New Haven, Conn.—The New York, New Haven & Hartford Railroad, for the present at least, has abandoned the plan of double-tracking the electric railway between Warren and Fall River. Sections of the railway were double-tracked, but the rails laid are now being removed to other sections of the system for use. This action is said to be due to the scarcity of steel for rails. As soon as possible the company will return to its original plan of double-tracking the entire railway.

***Gulf Ports Terminal Railroad, Pensacola, Fla.**—Efforts are being made to obtain the approval of the United States Railroad Administration for the completion of the Gulf Ports Terminal Railroad from Pensacola to Mobile, this line being an extension of the Pensacola, Mobile & New Orleans Railway. Track has been laid to a point within 18 miles of Mobile Bay and on the unfinished portion the roadbed has been graded and the bridges built. About $500,000 is required to lay the track and put the road in operation. It is proposed to seek $400,000 from the War Finance Corporation, while $100,000 is to be raised locally. The use of electric passenger cars is being considered. E. McLaughlin, president.

Lincoln (Ill.) Municipal Railway.—Plans are being considered for the reconstruction of the lines of the Lincoln Municipal Railway.

Anaconda Copper Mining Company, Anaconda, Mont.—An extension will be built by the Anaconda Copper Mining Company from the present terminal to the zinc plant, about 1 mile. The extension passes over a hill that makes an engineering problem of some size, and the estimated outlay is $50,000.

Boston & Maine Railroad, Portsmouth, N. H.—Plans have been made by the Boston & Maine Railroad for the construction of an extension from Dennett Street to the plant of the Atlantic Shipbuilding Corporation at Freeman's Point.

Interborough Rapid Transit Company, New York, N. Y.—Residents of Brooklyn have presented a petition to the Public Service Commission for the First District of New York asking for an extension of the Nostrand Avenue branch of the Eastern Parkway subway to Manhattan Beach, over the tracks of the Long Island Railroad. The Commission has referred the petition to its legal department.

Texas Electric Railway, Dallas, Tex.—Work is under way by the Texas Electric Railway on the construction of a line from Twenty-eighth and Lasker Streets into the Army Replacement Camp, about 1¼ miles.

Blue Ridge Light & Power Company, Staunton, Va.—Amendments have been made to the charter of the Blue Ridge Light & Power Company, changing the name of the company to the Shenandoah Traction Company.

Monongahela Valley Traction Company, Fairmont, W. Va.—Plans are being made by the Monongahela Valley Traction Company for a $2,500,000 loan to be used to complete work under way, including the Rivesville power plant, gas-producer plant, gasoline plant, drilling gas wells, laying gas mains, paving, extending transmission lines, developing coal land, sinking two shafts for mines, and the construction of twenty-five houses.

Shops and Buildings

Southern Pacific Company, San Francisco, Cal.—The Southern Pacific Company contemplates the erection of new shops in Roswell, N. M., to cost between $75,000 and $100,000.

Connecticut Company, New Haven, Conn.—The Connecticut Company plans to build a terminal station in Bridgeport, near the center of the city. This will be built on a so-called "plaza," ground space for which will be provided by the demolition of many old buildings by the city. Included with the terminal building will be pay-as-you-enter inclosures for car patrons.

Power Houses and Substations

West Penn Power Company, Connellsville, Pa.—According to an announcement made by the officials of the West Penn Power Company, controlled by the West Penn Railways, a new power plant will be erected on the Allegheny River at Freeport, at a cost of about $5,000,000. The proposed plant will have an output of 40,000 kw., and will provide power for essential industries of the district doing war work for the government. Of the necessary capital the government has agreed to advance $2,000,000. The plant will be in charge of the government, which will specify the distribution of the power.

Rutland Railway, Light & Power Company, Rutland, Vt.—A contract has been placed by the Rutland Railway, Light & Power Company with the Rutland Railroad for the supply of additional power to the amount of about 500 hp. for the operation of the new shops now in course of construction.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS

FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES • MARKET QUOTATIONS • BUSINESS ANNOUNCEMENTS

Inventory of Steel Stock To Be Taken

The Government Census Bureau Is Sending Questionnaires to All Manufacturers Asking for Reports

A country-wide inventory of stocks of steel on hand is being made by the War Industries Board at the instance of its chairman, Bernard M. Baruch, in co-operation with the Census Bureau of the Department of Commerce. The ascertainment of the supply of steel is of first importance in view of the deficiency of production of steel for direct and indirect war needs.

The present estimated total production of steel in sight is 17,000,000 tons, and war demands total more than 23,000,000 tons, with the demand constantly rising. In a recent interview with the Washington newspaper correspondent, Mr. Baruch announced he could not approve requests for an ounce of steel for domestic uses, because of the imperative need of meeting the war demands.

The Census Bureau through its census-taking organization, is sending questionnaires to more than 40,000 manufacturers in this country asking complete reports of stocks of steel on hand, down to the smallest holdings. It is sought to reach every manufacturer who uses steel in any way and in any amount in his industry. Cheerful compliance with the government's plan to inventory the stocks on hand is confidently expected by the War Industries Board, because of the win-the-war need that prompts the step and because of the general character of the inquiry.

A number of industries—such as the automobile industry—have been called upon to report stocks of steel on hand that the War Industries Board may be guided in making an intelligent administration of the steel stocks. Mr. Baruch decided, however, it was necessary to gather complete information from all steel-using industries and the War Industries Board determined on a general inventory from all manufacturers.

Effect on Railway Industry

The effect that this may have on the electric railway industry is largely dependent on how vital the government considers the electric railways in carrying out its war program. There may be certain lines that are not considered essential, and repair and maintenance parts of steel would undoubtedly be cut off from such lines. Manufacturers of electric railway apparatus feel that any stock of steel that they may have on hand for future use with electric railway equipment cannot be used to greater advantage to the government than by supplying the most urgent present needs of roads requiring this equipment.

Steel manufacturers state that they will follow government orders implicity and will roll only such shapes and manufacture only such steel parts as are approved by the authorities. No shipments will be made unless orders are accompanied by priority certificates or affidavits showing the essential use that will be made of the material.

This is in accordance with instructions issued to steel manufacturers by the government some time ago, and it has been followed since then.

Contract for 36-Mile Signal System Awarded

The Washington, Baltimore & Annapolis Electric Railroad has recently contracted with the Union Switch & Signal Company for block signaling to be installed over its double-track line between Naval Academy Junction and District Line, near Washington. This is a second section of signaling to be recently undertaken on the main line of this road between Washington and Baltimore, the first, between Naval Academy and Baltimore, having already been placed in service.

This new signaling will protect 36 miles of track and thirty-seven switches with twenty blocks on a headway of approximately three minutes under caution and six minutes under clear signals. The signaling has been laid out to reduce this running time one-half by the later addition of intermediate signals when future traffic warrants.

The apparatus will be similar to that employed in the first installation involving continuous alternating-current track circuits, style "N" color-type light signals mounted on iron pipe posts and Model 15 vane relays. Light-type switch indicators with push-button attachment will be used at all switches. Power at 2200 volts and 25 cycles will be secured from the railroad's power system at Naval Academy Junction.

General Electric Prospects for Current Year

Orders Running at Annual Rate of $250,000,000—Large Business from Government for Turbines

Current orders of the General Electric Company are running at the annual rate of $250,000,000 against a rate of less than $240,000,000 for the corresponding period last year, according to the *Wall Street Journal*. Bookings for the full year 1917 aggregated $246,778,491 and the amount by which they surpassed the rate up to this time last year bids fair to be equalled in the calendar year. In any event, it would not be surprising if the volume of sales billed in 1918 should reach the $225,000,000 mark against $196,926,318 in 1916.

Attainment of $250,000,000 total bookings in 1918 would establish a new high mark for the third successive year. Record 1917 bookings of $246,778,491 bettered the 1916 total by 45 per cent; they were 120 per cent larger than those of 1913 and 1764 per cent larger than those of 1896.

In the following table comparison is made for a number of years of bookings, billings, cost of sales and percentage of cost to gross.

According to the *Wall Street Journal* the percentage cost of sales of 85.2 per cent in 1917 was the lowest in many years. The percentage cost of sales in the last five years, including depreciation charges, has been about stationary and the average for the period is 88.7 per cent. This profit of 11.3 cents on the dollar compares with a profit of 14.1 cents in the year 1906 and 7.9 cents in 1896.

Year	Bookings	Billings	Cost of sales	P. C. cost to gross
1917	$246,778,491	$196,926,318	$167,921,778	85.2
1916	167,169,058	134,242,290	118,984,199	88.3
1915	98,385,891	85,522,070	76,898,182	89.9
1914	83,748,521	90,467,692	81,496,728	90.0
1913	111,819,142	106,477,438	96,207,833	90.3
1912	102,934,788	89,182,185	81,074,192	90.9
1906	50,044,272	43,146,902	37,025,346	85.9
1896	13,235,016	12,730,058	11,759,857	92.1

Manufacturing and labor costs being higher, it is probable General Electric this year will report a smaller percentage of net. As compared with 85.2 per cent in 1917, ratio of manufacturing costs and interest charges to sales billed will probably be not less than 88 per cent this year. Applying this percentage to the estimated total of $225,000,000 sales billed would give $27,000,000 net, to which must be added "other income" last year amounting to $4,512,290, or $31,512,290 in all. Profits

for the current year are estimated at $26,000,000.

An outstanding feature of company's financial position, it is pointed out, is its greatest strength of working capital. Cash on hand at the close of 1917 was $21,190,675, as against $12,167,707 at close of 1916. Total quick assets as of Dec. 31, last, were $154,549,251. Current liabilities aggregated $20,907,746, leaving working capital of $133,641,505, or $131.6 per share, as compared with $83,179,120, at the end of 1916.

The company has subordinated regular business to the government's needs. A substantial part of its present production consists of turbines for merchant ships and war vessels. The company has a blanket order from the government to turn out as many turbines and as much electrical equipment as its facilities will permit, so that with ordinary business accumulating, capacity operations at all plants of the company are assured for an indefinite period.

Car Equipment Market Conditions

Manufacturers In Position to Take Care of More Business — No Evidence That Prices Will Fall So Long as War Lasts

Broadly speaking, electric railways in that part of the country subject to severe winter conditions are in need of much new car equipment as the summer closes. Many of the roads in the North have not fully recovered from the strain the extraordinarily rigorous weather of last winter put upon their rolling stock. During the summer a good deal of important work has been done in the way of stocking up with spare parts against emergency conditions which may arise in the coming winter. One New England road, for example, has purchased about $50,000 worth of railway motor coils, and on the whole, the railway properties in that section are reasonably well supplied with this kind of material as the result of forehanded buying following the late winter severities. So far as spare motors go, however, few roads are in a position to feel over-confident as to their service maintenance in case the coming cold months force temporary withdrawals of equipment on a large scale. There is no question that companies with a fair-sized motor reserve made a much better showing and lost far less money from interrupted schedules last winter than did those which ran close to the wind, so to speak, in the matter of spare units.

The manufacturers are at present in a position to take care of a good deal more motor and control equipment business than is on the books. Some large orders are being handled, but in general, buying has been retarded by rather unsatisfactory credit conditions leading out of inadequate net earnings.

Motor and control equipment can be delivered from the factory in about three months at present, given the necessary priority order; and ordinary quotations run from four to five months. Despite the pressure of war orders upon the great majority of manufacturers, space is still available for the increased production of motors and other car equipment.

In conformity to the government's desires, very little stocking up is at present being done as regards equipment using large quantities of steel, copper and insulating material at the factories. It would be helpful to the manufacturer and to the operating companies as well if motor and accessory orders could be placed as far ahead of actual needs as possible, instead of waiting until the pressure of an unbearable operating situation inscribes the operating company manager's name upon the familiar dotted line. Motors are now being produced in considerable numbers for use on one-man cars, but there is still room for a much wider appreciation of the economic value of such equipment from the standpoint of merchandising transportation service.

Few managers indeed would contend at this time that they have no serious equipment needs. The question of means is the most important one in relation to the provision of new apparatus. Operating expenses have gone to unprecedented levels, and it is undeniable that the long-continued use of old rolling stock and motors has in many cases run unit costs up beyond former standards as well as increased platform expenses. There is a very close connection between the quality of service offered the public and the securing of sufficient revenue to maintain an adequate equipment reserve. There is a recognition in the industry that more frequent service must be offered on many lines in order to stimulate short-haul patronage, and with the drain the war is making upon the repair shops, a larger reserve in rolling stock or at least in motors and electrical apparatus used on the cars is needed.

The essential character of electric railway service in communities containing munitions plants, shipyards, arsenals, etc., has been recognized by the government and a considerable amount of buying on behalf of such properties has been a feature of the equipment market of late. On such roads, at least, the hand-to-mouth policy in purchasing car equipment has given way to a consistent development of the market along the lines of war necessity.

While no immediate advance in the price of car equipment is in sight, in view of the close control of the government over the prices of materials entering into such products, the cost of labor appears to be tending upward, and in manufacturing circles the opinion is voiced that there is little use in deferring the purchase of equipment because at some later date prices may go considerably lower than at present. So long as the war lasts and indeed for some time thereafter, it is more probable that prices will run nearer present levels than much below them. Experienced observers of market conditions are emphasizing the fundamental need of electric transportation and the corresponding economic demand for more equipment. This must be met through equipment trusts or some other suitable financing, and it is advantageous for the operating companies that the manufacturers are in as good a position as at present appears to be the case to handle orders for new and reserve car equipment.

Coal Production Recovers From Slump

Total Production for Year to Date Is 869,000 Tons or 2.17 per Cent Over 1917

Recovery from the slump of the past five weeks marked the production of bituminous coal during the week ended Aug. 24, according to the weekly report of the Geological Survey. The output during that week (including lignite and coal made into coke) is estimated at 12,603,000 net tons and not only exceeded the production during the week preceding by 669,000 net tons, or 5.6 per cent, but exceeded the production during the past three weeks. Production during the current week of 1918 was 1,852,000 net tons, or 17 per cent in excess of the production during the corresponding week of 1917.

The average production per working day during the week of Aug. 24, is estimated at 2,100,000 net tons, as against 1,989,000 net tons during the week preceding, and 1,792,000 net tons during the week of Aug. 24, 1917.

Anthracite Production Up

Production of anthracite in the United States during the week of Aug. 24 is estimated at 2,134,000 net tons, as against 1,924,000 net tons during the week preceding, an increase of 10.9 per cent, and as against 1,988,600 net tons during the corresponding week of 1917, or an increase of 7.3 per cent. The average daily production during the week of Aug. 24 is estimated at 355,667 net tons, as against 336,839 net tons during the coal year to date, and as against 329,831 net tons during the same period of 1917.

Total production for the coal year to date is estimated at 41,768,000 net tons, an increase over 1917 of 869,000 net tons, or 2.1 per cent.

The anthracite industry, according to *Anthracite News*, goes into the fall with no storage coal and orders far in excess of current producing capacity.

More coal could be produced if the labor power could be increased. The anthracite mine-workers' army has been reduced 80 per cent since the war began. That this has not prevented a record output is because of every mechanical apparatus and washing operations that is being employed to overcome this handicap.

Rolling Stock

Connecticut Company, New Haven, Conn., will purchase from the American Car Company, St. Louis, Mo., twenty one-man cars, permission for the purchase of which was announced in last week's issue of the ELECTRIC RAILWAY JOURNAL. These cars will be 27 ft. 9½ in. over all in length and 8 ft. in. width. The height from the rail to the top of the roof will be 9 ft. 9⅝ in. The platform floor will be on the same plane as the body floor, and folding doors and steps will be provided. The cars will have two-motor equipment, with air brakes and all modern safety features. The total weight will be 5 tons. The company will also purchase fifty interurban cars of the Connecticut Company's standard dimensions, the length being 48 ft. 2 in. over all. The seating capacity of these cars will be fifty-six, and they will be equipped for double-end operation. The total weight will be 24 tons.

Trade Notes

Chicago (Ill.) **Pneumatic Tool Company** announces the appointment of C. W. Cross as special representative for the sale of pneumatic tools to railroads, succeeding L. C. Sprague, promoted to be district manager of sales for the company at New York.

Vulcan Steel Products Company, Inc., 120 Broadway, New York City, has made the following announcement: Governmental restrictions concerning house organs and the urgent need for the conservation of labor and material render it advisable to discontinue the publication of *Vulcan*. The August issue—which we have striven to make our best edition—will be the last *Vulcan* during the period of the war.

Page Steel & Wire Company annual meeting resulted in the election of Norman Bridge to the board to fill the vacancy created by the death of the late Austin Clement. The board organized by electing the following officers: B. Lissberger, president; A. A. Clement and J. N. Podrasnik, vice-presidents; A. B. Cody, secretary; J. E. Carr, assistant secretary and assistant treasurer; J. N. Podrasnik, treasurer, and E. C. Sattley, general manager. Dividends were declared from the profits in the period from Jan. 1, 1918, to July 1, last, as follows: $3 a share on the first preferred stock and $3.50 a share on the preferred stock, payable on Oct. 31 to stock of record as of Oct. 15. The net profits before taxes for the year ended June 30, 1918, were $420,556. It was stated after the meeting that the company had $4,000,000 of unfilled orders on its books.

New Advertising Literature

Walter A. Zelnicker Supply Company, St. Louis, Mo.: Bulletin No. 247, descriptive of locomotives, cars, trucks, shovels, ditches, skidders, loaders and machine tools.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.: Catalog 3-B, dated June, 1918, a very comprehensive bulletin on switchboard, portable and precision instruments, meter shunts, instrument transformers and relays.

Jeffrey De Witt Insulator Company, Huntington, W. Va.: Catalog No. 2, describing and illustrating its high-tension disk insulators. Illustrations are produced which show the effect of high-frequency tests on these insulators at 600,000 volts and 10,000 cycles. High-frequency tests are also shown with Corona effects top and bottom at 110 kv. and the flashover in air at 125 kv. These insulators are also shown in strain. Substations equipped with the "JD" insulators and transmission lines are also produced.

NEW YORK METAL MARKET PRICES

	Aug. 28	Sept. 4
Copper, ingots, cents per lb	26	26
Copper wire base, cents per lb	29.25	29.25
Lead, cents per lb	8.05	8.05
Nickel, cents per lb	40	40
Spelter, cents per lb	9.00 to 9.25	9.50
Tin, Chinese*, cents per lb	90 to 90.5	....
Aluminum, 98 to 99 per cent., cents per lb	†33.10	†33.10

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

OLD METAL PRICES—NEW YORK

	Aug. 28	Sept. 4
Heavy copper, cents per lb	23.50 to 24.50	23.50 to 24.50
Light copper, cents per lb	20 to 21.50	21.00 to 21.50
Red brass, cents per lb	22 to 23	23.50 to 24.50
Yellow brass, cents per lb	13¾ to 14½	16.00 to 16.75
Lead, heavy, cents per lb	7.50 to 7.75	7.50 to 7.75
Zinc, cents per lb	6.75 to 7.00	7.50 to 7.75
Steel car axles, Chicago, per net ton	$41.52	$41.52
Old carwheels, Chicago, per gross ton	$29.00	$29.00
Steel rails (scrap), Chicago, per gross ton	$34.00	$34.00
Steel rails (relaying), Chicago, gross ton	$60.00	$60.00
Machine shop turnings, Chicago, net ton	$16.25	$16.25

ELECTRIC RAILWAY MATERIAL PRICES

	Aug. 28	Sept. 4
Rubber-covered wire base, New York, cents per lb	30 to 37	30 to 37
Weatherproof wire (100 lb. lots), cents per lb., New York	32.40	32.40 to 36.75
Weatherproof wire (100 lb. lots), cents per lb., Chicago	35.00 to 37.72	35.00 to 37.72
T rails (A. S. C. E. standard), per gross ton	$70.00 to $80.00	$70.00 to $80.00
T rails (A. S. C. E. standard), 100 to 500 ton lots, per gross ton	$67.50	$67.50
T rails (A. S. C. E. standard), 500 ton lots, per gross ton	$62.50	$62.50
T rail, high (Shanghai), cents per lb	4¼	4¼
Rails, rdger (grooved), cents per lb	4¼	4¼
Wire nails, Pittsburgh, cents per lb	3½	3½
Railroad spikes, drive, Pittsburgh base, cents per lb	4½	4½
Railroad spikes, screw, Pittsburgh base, cents per lb	8	8
Tie plates (flat type), cents per lb	*3¼	*3¼
Tie plates (brace type), cents per lb	*3¼	*3¼
Tie rods, Pittsburgh base, cents per lb	7	7
Fish plates, cents per lb	*3¼	*3¼
Angle plates, cents per lb	*3¼	*3¼
Angle bars, cents per lb	*3¼	*3¼
Rail bolts and nuts, Pittsburgh base, cents per lb	4.90	4.90
Steel bars, Pittsburgh, cents per lb	5	5
Sheet iron, black (24 gage), Pittsburgh, cents per lb	4.90	4.90
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb	5.80	5.80
Galvanized barbed wire, Pittsburgh, cents per lb	4.35	4.35
Galvanized wire, ordinary, Pittsburgh, cents per lb	3.95	3.95
Car window glass (single strength), first three brackets, A quality, New York, discount†	80%	77%
Car window glass (single strength, first three brackets, B quality), New York, discount	80%	77%
Car window glass (double strength, all sizes AA quality), New York discount	82 & 3%	79%
Waste, wool (according to grade), cents per lb	11½ to 22	11½ to 22
Waste cotton (100 lb. bale), cents per lb	13 to 13½	13 to 13½
Asphalt, hot (150 tons minimum), per ton delivered	$38.50	$38.50
Asphalt, cold (150 tons minimum, pkgs. weighed in, F. O. B. plant, Maurer, N. J.), per ton	$42.50	$42.50
Asphalt filler, per ton	$45.00	$45.00
Cement (carload lots), New York, per bbl	$3.20	$3.20
Cement (carload lots), Chicago, per bbl	$3.34	$3.34
Cement (carload lots), Seattle, per bbl	$3.68	$3.68
Linseed oil (raw, 5 bbl. lots), New York, per gal	$1.86	$1.90
Linseed oil (boiled, 5 bbl. lots), New York, per gal	$1.88	$1.92
White lead (100 lb. keg), New York, cents per lb	10½	14
Turpentine (bbl. lots), New York, cents per gal	63	65½

* Government price. † These prices are f. o. b. works, with boxing charges extra.