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The Lesson to Manufacturers, Dealers and Workmen

THERE has never before been a war in which those who are not actually enrolled in the military or naval forces have so much responsibility laid upon them. Our ultimate success is certain because of our preponderance in resources of all kinds, but each day by which the war can be shortened means a saving in men and money to this country and to its allies. It is to emphasize this fact that we publish this week a supplement entitled "Is This My Boy?" prepared by the art department of the McGraw-Hill Publishing Company, Inc. Every manufacturer or retailer who unduly raises the price of the goods which he has to sell and every workman who reduces the output of necessities by striking during this critical period helps to add to the difficulties of our winning the war. It is the duty of each individual to think first of those at the front, where many of those whom he knows, including perhaps his own son or brother, are in a position of bodily danger. This will help him to do all he can to win the war and thus make the world safe for democracy.

The Union Freight Terminal as a Means to Greater Service

WE HAVE already emphasized in these columns that in addition to the benefits in increased revenue that would accrue, the railways, by developing an express or freight business, can perform a significant patriotic service. It is therefore gratifying to note any improvements in electric freight-handling facilities which will relieve the already congested steam roads. A noteworthy step in this direction is the opening of a union freight terminal at Kansas City, described elsewhere in this issue, being used by several interurban roads which were already hauling a considerable amount of freight. These roads have thus made it as convenient for many shippers to use the interurbans as the competitive steam roads—no doubt a factor in acceptable service from the shipper's standpoint—and thereby have acquired business that they could not command individually. This supplies further evidence of the fact that the business should be obtained by superior service and not through lower rates. While the location of Kansas City as a center for the meat and grain industries offers a field unusually favorable for the development of freight traffic, there are many untried opportunities elsewhere. Roads where the union terminal idea has not materialized should not overlook the chance to co-operate and to extend the limits of their service which interchange freight handling affords.

Right of State to Fix Rates Is Paramount

THERE is no legal reason why the applications for higher electric railway fares in New York State should not be considered and decided upon their merits. This is the important meaning of the decision just rendered by the Second District Commission, granting a 6-cent fare to the Huntington Railroad. In other words, the commission has ruled that when the maximum fares chargeable under the old railroad law or under local franchises are insufficient to yield reasonable compensation for the service rendered, an increase in fare may be authorized. To be sure, in thus recognizing the supreme rate-making power of the State acting through its delegate, the Public Service Commission, the New York body has merely followed the Court of Appeals in the Ulster & Delaware case and the Appellate Division for the Third Department, New York State, in the New York & North Shore Traction case. Every new supporter for such a sound rate-making policy, however, is a distinct gain and increases one's hope that such a policy will be sustained in any court appeal. In this connection it may be interesting to recall that the Oregon Public Service Commission, in the Portland decision abstracted in our issue of Oct. 27, similarly recognized the sovereign power of the State "under a well-established line of authority." Although not every commission or court has such a sound understanding of rate-making theory, such bodies seem to be learning. Let us hope that the time will soon come when the right of commissions to exercise their full powers will not be subject to obstruction in any locality.

The Advertising Value of Attractive Substations

THE power substations on electric railway properties are in many cases located in residence districts in cities or near well-kept highways lined with attractive country homes. While the function of these substations is usually not understood by the public, they are known to have some relation to the railway and hence play a part in forming the reputation of that utility. That this fact is appreciated by railway managers is indicated by the increasing attention given to the architectural features of the substation buildings. The slight extra expense necessary to make a small building accord with the general architectural tendencies of a neighborhood, or even to dominate them if need be, is not great compared with the results achieved. A dignified, harmonious building suggests good management elsewhere on the property and a de-

sire to lend a hand in civic improvement. Where a substation must be placed in a closely built-up neighborhood, it is often not enough to house the machinery with regard to appearance only. The hum of rotary converters might prove objectionable in such cases. It is possible by suitable design of foundations and walls, largely to confine the necessary noise to the buildings themselves. Quietness is, therefore, sometimes an element of attractiveness. Both these principles are illustrated in a recent Chicago substation on which the leading article this week is based. The plant contains many features of interest to the electrical engineer, but it is to the structural and architectural side that we wish to direct particular attention. The Chicago building is a far cry from the simple structures built to protect the early rotary converters from the weather, but it emphasizes the fact that as the power side of the electric railway has developed the substation has gradually grown from insignificance to a position of the greatest importance. The substation serves to transform alternating current to direct current power with almost negligible loss, but it still provides many problems for the electrical engineer to solve. At the same time it furnishes an opportunity for the building expert to act as a medium for making and maintaining a favorable impression on the public.

Fitting Up Service

Cars for Snow Fighting

THESE are the days when the snow plows and sweepers are conspicuous in the shops in many parts of the country, as the prudent transportation and way department managers prepare for the mighty conflicts to come. Records of the weather bureau in New York show that up to date this year there has been a deficiency of about 5 in. in the normal precipitation, which is usually about 40 in. up to this time. Whether or not this fact portends a heavy snowfall there is always the possibility that the snow which comes will fall in a few heavy storms, taxing resources to the limit. A liberal snow-fighting equipment is, therefore, a highly desirable asset, especially in view of the labor shortage.

In spite of the great amount of attention which has necessarily been given to removal of snow there is a surprisingly small amount of literature on the subject. This fact was recently brought to our attention by the librarian of one of the large electric railway companies who had taken the trouble to assemble a set of references for the benefit of the engineers of his company. Realizing the demand thus indicated, the ELECTRIC RAILWAY JOURNAL has printed a number of articles on the subject during the past few years and adds to the list this week one giving the results of the study and experience of the Connecticut Company's engineering and operating departments. The suggestions contained in this article are the result of the work of a committee appointed to make such recommendations as would enable the company to cope with its own problems successfully, utilizing existing equip-

ment effectively and considering carefully the item of expense. The recommendations of this committee are being carried out.

An important conclusion stated in the article, which appears to be sound because it is the same as other companies have reached, is that service cars can be utilized satisfactorily as snow fighters by fitting them up in the fall with plows and scrapers, thus permitting them to be kept in use through a much greater part of the year. A natural corollary to this is that with a large number of such snow-fighting units kept moving continuously during a storm, accumulation of snow on the tracks can be prevented so that it will not often be necessary to buck large drifts. Big plows will, of course, always be needed on many properties and especially in the country where the snow drifts violently, but even on interurban lines service cars can be used to supplement the work of the plows.

Last but not least, greater use can be made of the sewers in cities, utilizing the sewage efficiently as a snow conveyor. Surely a municipality is as much interested as the railway in keeping the streets clear and it ought not to withhold permission for the use of the sewers when once convinced that snow will not cause stoppage of the flow in the sewer system.

Install Skip-Stops Where

Interurbans Pass Through Towns

THE value of an interurban line is dependent largely upon the speed with which its cars can be safely and economically operated. The attractiveness of this service to the public is primarily dependent upon the quickness with which the journey between any two points can be completed. It has been found, moreover, that the ability of the interurban to withstand successfully the competition of privately-owned automobiles operating on state highways is directly proportionate to the speed of operation of the electric car. The interest of the security holder, therefore, points clearly to speeding up interurban service, wherever possible, within practicable limits.

An analysis of the schedule of the average interurban shows that most of the time which is lost is consumed by unnecessary stops within the limits of cities and villages. The average village has written into its franchise requirements concerning the speed of operation within the corporate limits and a provision that interurban cars must stop at every street when signaled by a passenger desiring to board or alight. In consequence, the interurban car crawls slowly through the villages and the amount of time thus spent, in proportion to the total running time, bulks very large.

In most villages the size of the average block is comparatively small, and the street intersections are therefore numerous. Attempts by interurban operators to introduce skip stops usually meet with vociferous opposition. The public fails to see that such changes are in its interest. The argument that skip stops are being used in Cleveland and other cities with

populations running into the hundreds of thousands fails to move the village fathers, who obdurately hold to the view that to require passengers to walk a distance not to exceed a block and a half is unreasonable. If there is sufficient short-distance riding in the village to warrant a shuttle service, it can be supplied by a one-man car. But whether this is the case or not, through passengers should not be delayed.

We have come to the time when the whole matter of municipal franchise regulation of electric railways must be subjected to a most searching test. The incongruity of creating public service commissions with jurisdiction over rates and service, and then endeavoring to handicap them by allowing municipalities to exact all sorts of unreasonable requirements, must eventually be clearly seen by the public. The question as to how many stops should be provided in a given community is a matter which must be determined not only with reference to local convenience, but also with due regard to the interests of the entire area served by the interurban road. The interests of the associated communities are obviously larger than that of any single village or town, and as each community receives equal benefit, the proposed change is really in the interests of all. But as the simplest way of effecting this reform is for the order to come from a central authority, it is obvious that public service commissions should possess the unequivocal right to prescribe skip stops in villages in order that interurban service may be made as useful as possible.

What "Standing In" with the Newspapers Really Means

ONE of the needless worries of the electric railway man is over how he is going to "stand in" with the newspapers. If in the management of his company he is doing the very best he can the public will appreciate that fact, and the newspaper must in turn reflect that appreciation. If it does not, it will be the sufferer, for no newspaper can permanently run counter to the prevailing public sentiment. No one knows this better than the intelligent publisher. A utility that has the public's good-will and deserves it need never worry over the attacks by any newspaper. In the first place such a paper will soon run out of ammunition, and in the second place its attacks will react upon itself. There is no other business so utterly dependent upon public good-will as the newspaper business.

On the whole there is little to be gained from intimate association with the newspapers. If you have news for them which they regard as news, they will be only too glad to print it. Simply see that they get it. That's a favor to the paper. But don't ask that it be printed. Nothing will turn a newspaper man against one so quickly as to ask him, as a favor, to print something that he would not gladly print on its news merits.

The real good-will of a newspaper cannot be gained by buying advertising space. That may work with an

occasional paper but not with newspapers as a class. The relationships of a public utility with newspapers should be on a basis that admits of no question. They should pay for what they get and demand pay for what they give. The old idea that giving passes to newspaper men was a good practice belongs to an earlier and less wholesome understanding of such relationships. The public doesn't approve of this system. Similarly with handling of the newspapers' output as freight. The public believes in such service being paid for, and for that reason if no other it should be paid for. But there is another reason, the reason of the self-respect and conscious rectitude that arises out of relationships that are wholly "on the level." Nothing is more marked among newspapers as the years go by than the gain in influence, power and prestige of the really responsible press—the newspaper that refuses to print doubtful advertising, that keeps its news columns clean, that never willingly or knowingly prints unfounded statements. This section of the press—which is growing larger and larger—is highly jealous of its reputation. Such a newspaper would resent it if the statement were made that any particular corporation or interest "stood in" with it.

Public utility managers know that newspapers as a rule are fair, though newspaper publishers and editors have the same human frailties that electric railway men and others have.

The only "standing in" a public utility should work for is this: do the best you can in the way of service; then let newspapers be made to feel that they can always get the facts from the company, even if those facts are unpleasant ones. The manager's door should always be open to the responsible press.

If a newspaper prints something unpleasant about an electric railway company or its service, real progress will be made if, instead of wondering "what the newspaper's game is," the management will find out whether what the newspaper has printed is justified. An ingrown habit of always attempting to justify "what is" is far too prevalent among electric railway managers and the managers of most other public utilities.

An electric railway may rest assured that if its case is sound and honest it will fare better with both newspapers and public by a policy of outspoken frankness, standing up for its rights and admitting its faults, than by choosing the Bourbon policy of secretiveness and silence and attempting by "standing in" with the newspapers to blind the public to the real responsibility for poor service.

No set of men has more respect for a straight-from-the-shoulder policy than newspaper publishers, editors and reporters. Once they are convinced a company really lives such a policy, its managers are sure of fair play. That's the only kind of "standing in" with the newspapers that is of any real value. It is a kind that will invariably come from a company's living a life that is like the proverbial "open book, that he who runs may read."

A Model Substation for a Chicago Residence District

New Commonwealth Edison Substation Embodies Special Features of Design to Reduce Investment, Promote Operating Efficiency, and Guard Against Disturbance to Surrounding Residents



CHICAGO SUBSTATION—PLEASING ARCHITECTURE AND ATTRACTIVE LAWN AID IN OVERCOMING STIGMA OF SUBSTATION

THE Commonwealth Edison Company of Chicago has completed in the Wilson Avenue residential district a new combination railway and lighting substation, known as the Clifton Avenue station, which embodies many special features of building and electrical design intended to meet the particular requirements of the locality and to introduce certain operating economies. It is to supply 600-volt direct-current energy to the Chicago Surface Lines and the Northwestern Elevated Railroad, and power at 4000 volts to the lighting and power customers in the vicinity. By using 60-cycle rotary converters for the railway work, it was possible to serve both the railway and the lighting customers off the same alternating-current transmission lines and thus materially reduce the investment in line copper, and at the same time effect better operating economy on these high-tension cables by improving the load factor. This is the first time the Commonwealth Edison Company has adopted the combination use of high-tension lines. The location of the substation in the midst of a fairly high-grade residence section made it necessary to erect the building with special care to muffle the noise of the converters in order that the station might not be disturbing to the near-by residents. The company also used a style of architecture embodying a simple, dignified beauty in its endeavor to make the building an attractive addition to the neighborhood, and one which would not detract from the value of the surrounding property.

In general, the station is a one-story, steel and brick structure with basement, and has concrete floors and roof. It is laid out in five bays or units, each bay to

contain a railway rotary converter and transformer and a lighting transformer with its group of outgoing feeders. Only two bays are equipped at present, but the remainder of the building, excepting the concrete floor and the machine foundations in the last two bays, is completed. The fact that no crane was installed, despite the large size of the machinery units, permitted a much lighter building construction and greatly reduced the necessary investment.

SPECIAL FEATURES OF BUILDING TO BEAUTIFY EXTERIOR AND MUFFLE NOISE

The exterior walls of the substation which face the two streets on the west and south were constructed of red vitrified ornamental brick with a tile insert frieze. The concrete base was carried up to the first floor level, which is about 4 ft. above the sidewalk grade, and on this was laid a belt of coarse cut stone. The front entrance to the building was beautified by placing bronze fixtures on the stone portals. Cut stone cornices were used and a number of alabastine globes were inserted in the walls near the roof line for the installation of decorative lighting units. Special pockets were built in at the bottom of the recessed arches in the front wall for installing X-ray floodlighting reflectors to illuminate the front of the building. These features, together with an ornamental fence, lawn, window boxes and shrubbery, will result in a building which will improve rather than detract from the appearance of the community.

The matter of confining the noise of the rotary converters within the station constituted one of the prin-

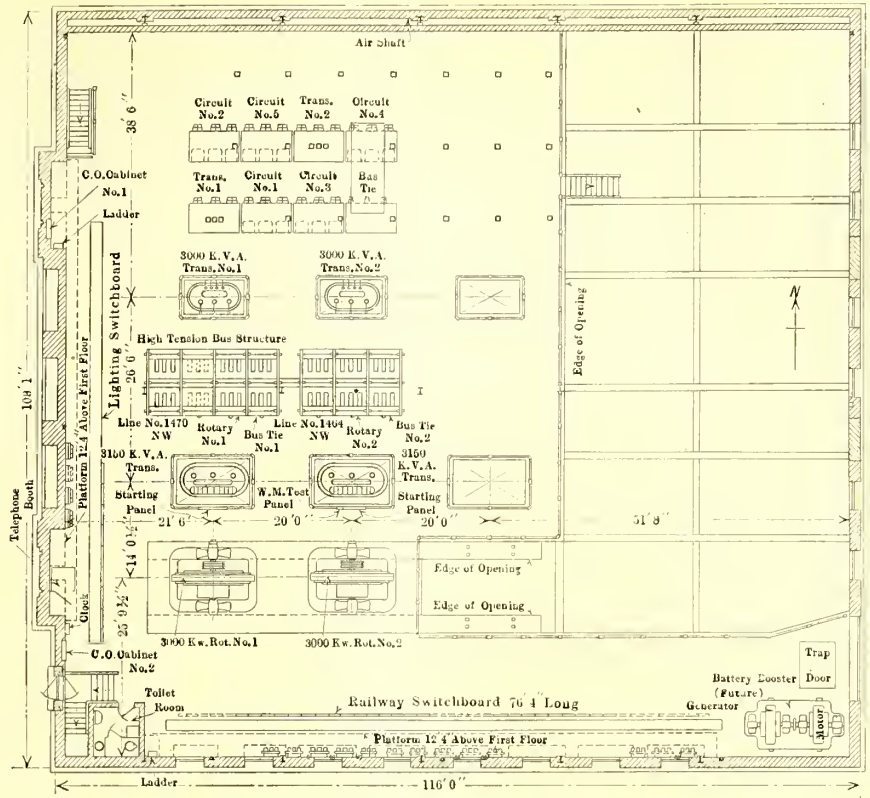
cial problems. To this end, the machines were installed on a concrete foundation which was built entirely separate from the building foundation, steel work and floors. The machines were supported on two parallel walls constructed in an opening in the substation floors and separated from them by a space approximately $\frac{1}{2}$ in. wide. This construction was utilized to prevent the vibration of the machines from being taken up by the building steel and concrete and transmitted to the outer walls. Any cable or conduit which passed through the machine foundations was wrapped with felt paper or burlap to avoid a bond which would transmit vibration to the building.

The north and the west walls, which face residences, have no windows. The north wall was made double with a space between walls which is used as an air intake for the machine ventilation. In the penthouses over the machines the windows on the north side are made so that they cannot be opened. Only those on the south side, which tend to throw the sound away from the surrounding residences, can be used for ventilating purposes. The windows on the north and west sides of the basement are made double and kept permanently closed. These special features have proved very successful in muffling the noise.

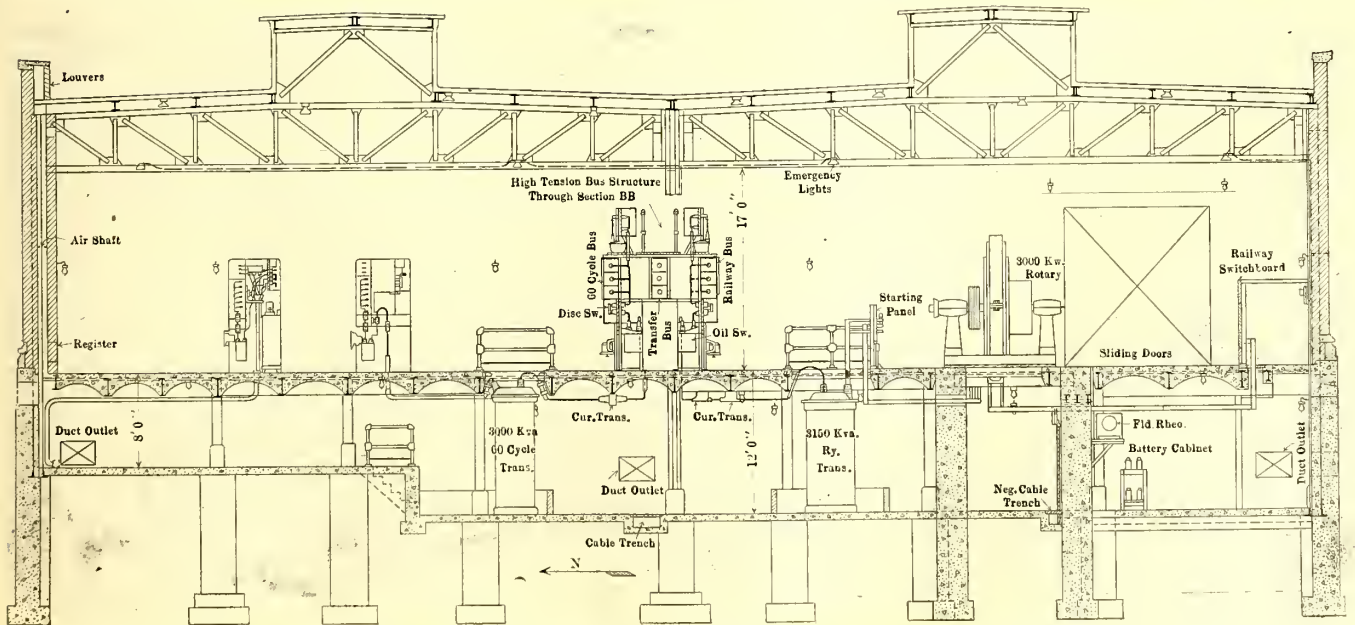
PRESENT EQUIPMENT IN SUBSTATION

At the present time the equipment in the Clifton Avenue substation includes two 3000-kva., 12,000/4000-volt lighting and power transformers, and two 3150-kva., 12,000/445-volt railway transformers. These are oil-insulated, water-cooled transformers of General Electric Company manufacture with sheet-steel tanks. The circulating water is taken from the city water mains on

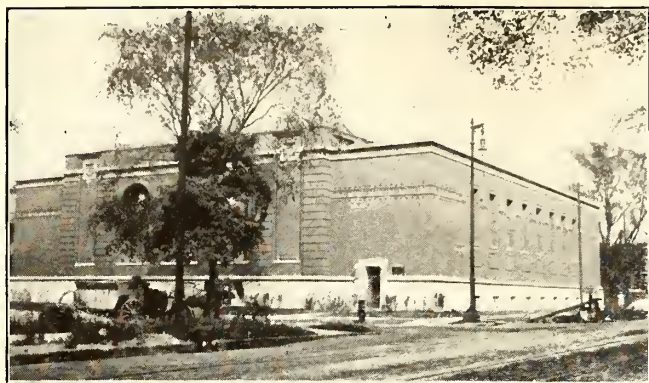
two different streets for reliability, and a Bristol recording thermometer is connected with each transformer. In addition to the double water feed precaution the Edison Company transformer specifications require the ability to carry 50 per cent full load continuously without any cooling water. A 4-in. concrete dike, 2 ft. 6 in. high, is built around the base of each transformer to keep the oil from spreading over the basement in case of damage to the tank. Space is provided for an ultimate installation of ten transformers. The two rotary converters installed at present are 60-cycle, 3000-kw., 5000-amp., 360-r.p.m. interpole machines, also made by the General Electric Company. The layout includes five of these or larger machines.



CHICAGO SUBSTATION—FIG. 1—PLAN SHOWING LAYOUT OF EQUIPMENT



CHICAGO SUBSTATION—FIG. 2—SECTIONAL VIEW SHOWING EQUIPMENT IN ONE BAY



CHICAGO SUBSTATION—WEST FRONT AND SOUTH SIDE OF SUBSTATION

giving an ultimate total railway capacity of at least 15,000-kw. The machines are set on two 4-in. x 6-in. timbers placed on each of the foundation walls in order to insulate them from ground. Men working on these machines are in a measure protected from flashover burns by special asbestos-board barriers. These are placed around the outer periphery of the commutator, on one side of each set of brushes as close to the commutator surface as possible without touching and around the inside periphery of the commutator against the commutator radials. These barriers are installed to break up and deflect the flames in case of a flashover, and to protect the commutator, brushes, holders and brackets as far as possible from the burning, pitting and fusing action of the flash. The outer guard serves especially to deflect the flame from a course directly off the end of the commutator and hence to protect operators or other persons who may be in front of the unit.

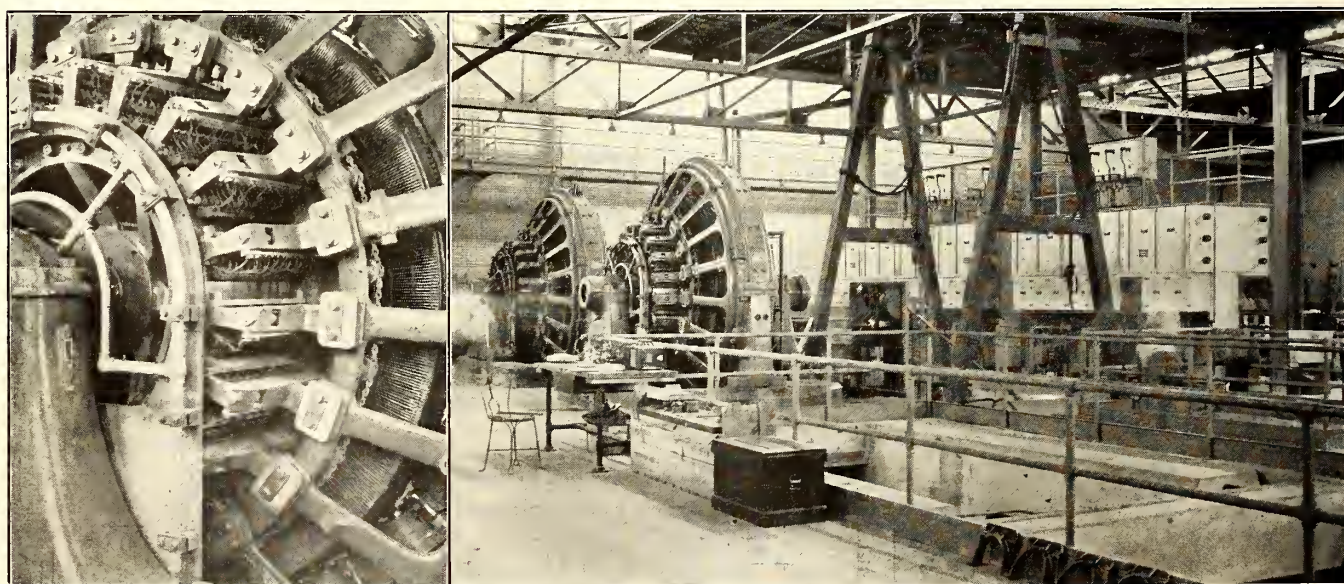
As protection against the occurrence of flashovers, a flashover relay for each machine is installed on the switchboard and connected between non-current-carrying parts of the machine and the railway negative bus. This acts instantaneously in case of a flashover to open the circuit breakers and oil switch and entirely isolate the machine on both the alternating-current and direct-current sides. It has been found that where the machine frame is thoroughly insulated from ground, as

by means of the wood base, except for the connection through the flashover relay, which will take only a very small current, very little of the flashover carries to ground. This arrangement has greatly reduced if not entirely eliminated the heavy sustained flash with its destructive and dangerous forces, such as is experienced with machines having the frames solidly grounded.

Aluminum cell arresters, one for every 500-kw. capacity, are connected, one-half directly across the armature and the other half from the positive to the negative terminals of the machine. These are intended more to take up any high static charge on the machine than for current surges. On the alternating-current side of the machines, six carborundum resistance cells used in conjunction with the knurled-spool adjustable spark gap are connected across each phase. Separate field excitation is used in starting these units by taking one-tenth shunt-field current from the 600-volt bus. This insures the fields building up to correct polarity.

LAYOUT OF SUBSTATION EQUIPMENT

The 12,000-volt lines supplying the station enter the basement at the center of the front wall, extend along a trench in the basement floor and rise through the high-tension bells and current transformers to the oil switches and disconnect switches and high-tension railway and lighting buses directly above on the main floor. This double-bus structure is so located that it divides the floor space into two approximately equal parts. The space on the south side is utilized by the railway apparatus and that on the north side by the lighting and power equipment. One deviation from this segregation of the lighting and railway equipment, however, was expedient. The lighting and power switchboard was placed along the front or west wall of the building, while the railway board was placed along the south side. If the two switchboards had been installed along the opposite walls, one or the other would not have been within view of the operator and the distance between boards to be covered in case of emergency would have been considerable. These features, of course, are bad from the standpoint of efficient operation. With the present arrangement an operator can stand at the cor-

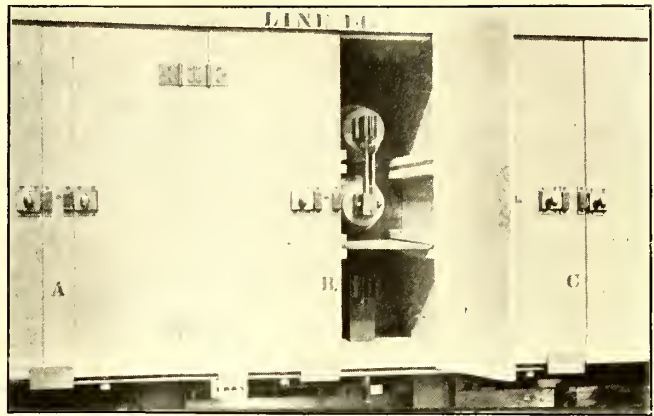


CHICAGO SUBSTATION—FLASHOVER BARRIERS ON CONVERTERS—CONVERTERS, HIGH-TENSION BUS STRUCTURE AND A-FRAMES USED TO LIFT HEAVY PIECES

ner of the building and be within view of all the principal meters and other apparatus in the station requiring close observation, and all switchboard equipment is comparatively close together.

In laying out the entire electrical equipment, the governing consideration was to locate each piece of apparatus so that the most efficient and convenient operating conditions could be secured. The joint use of high-tension cables for both railway and lighting loads, already touched upon, eliminates one 12,000-volt line and makes possible a corresponding saving for the remaining three bays of the station when they are equipped in the future. It also eliminates one set of buses and one set of indicating and recording instruments on the incoming side, as compared with previous practice which required a separate set of unit buses and transfer buses for both the lighting and railway service. The high-tension cable and bus connections are so arranged that it is possible, when desired, to segregate any cable for connection to one rotary or one set of secondary feeders only; or by means of the one transfer bus common to both the railway and lighting connections, any combination of lighting and railway load desired can be placed on any high-tension cable. This permits tying all buses together for parallel operation of the 12,000-volt lines and provides for the installation of reverse energy relays on all the lines as a further protection to the transmission service to the substation. This one transfer bus extends through the center of the bus structure with the railway rotary buses on one side and the lighting transfer buses on the other. The oil switches for both services are directly underneath these buses on the station floor, leaving a 3-ft. aisle between the two rows in which to work on the switch units. The Sweitzer-Conrad high-tension fuses and the potential transformers are placed above their respective lines on top of the bus compartment, and here also an aisle is railed off between the two rows of equipment. This arrangement is clearly shown in Fig. 5 on page 940.

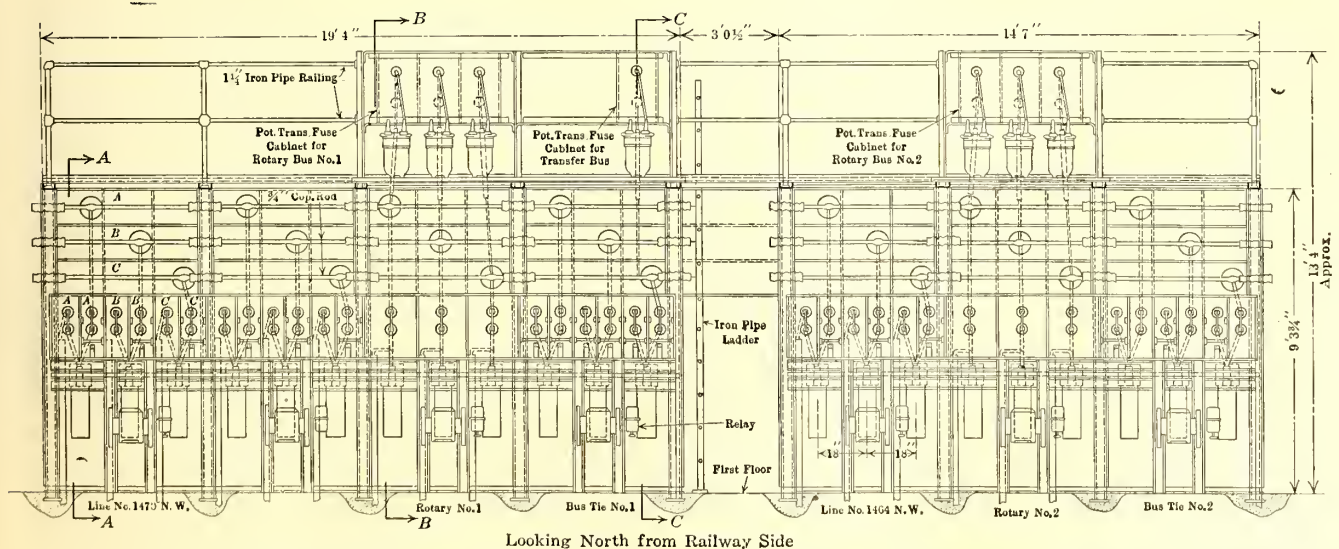
The 12,000-volt bus structure is made up with 4-in. channel-iron framing, cross-braced with channel and angle-iron members. Asbestos board, 1/2 in. thick, is placed on each side of the vertical and horizontal channels, and the bus-support insulators are installed



CHICAGO SUBSTATION—HIGH-TENSION BUS COMPARTMENT SHOWING LOCKING AND GROUNDING PROTECTION

through the two boards. Marble slabs are installed for the vertical barriers on which the various disconnect switch supports are mounted.

The special features of the bus compartment are the provisions for the protection of men in the station while installing new equipment and repairing and cleaning switch apparatus and buses, and also for grounding transmission lines while work is being done on them outside. Grounding of any bus or transmission line for protection is accomplished by throwing the disconnect switch over to a lower contact which is connected to ground through an oil switch. By grounding through the oil switch, the operator is removed from any possible zone of danger, as the last operation performed is the closing of the oil switch from the control handle on the switchboard. This scheme eliminates the use of jumper cables and clips for the purpose, which are generally recognized as unsightly and awkward to handle, if not dangerous. An asbestos-barrier board is slipped in grooves between the hinge, or live side, of the disconnect switch and the terminal on which it is desired to work. When this switch has been placed in the grounded position a special locking scheme, shown in an accompanying illustration, enables the workman to lock the compartment to prevent any other person changing the switch. This locking mechanism can be shifted to prevent opening of the doors of either set of disconnects, or both, for that line,

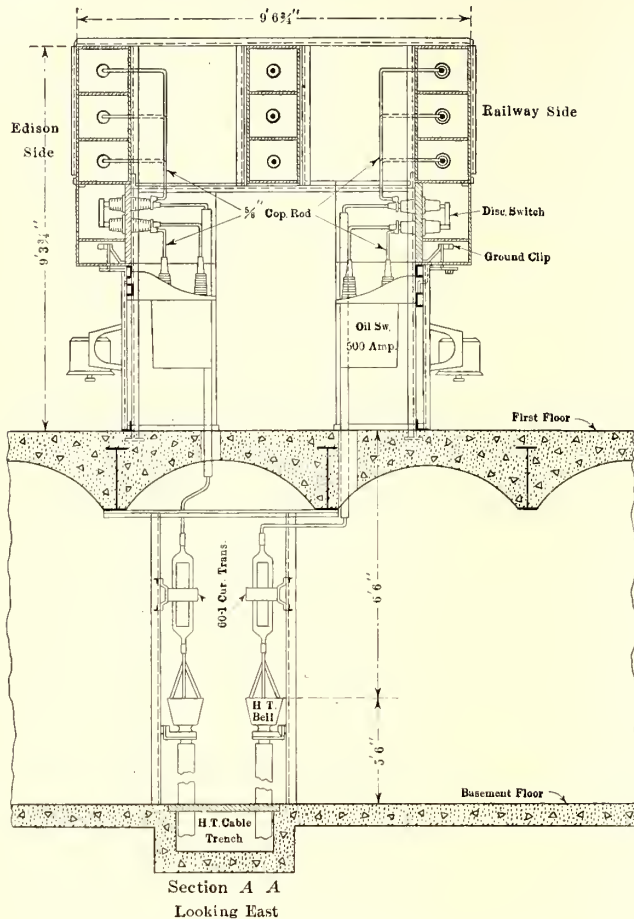


CHICAGO SUBSTATION—FIG. 3—ELEVATION OF HIGH-TENSION BUS STRUCTURE

and can be locked in any of the three positions by inserting an ordinary padlock in the proper combination of holes in the two plates at the bottom of the cabinet.

The railway and lighting buses are, of course, sectionalized in order to isolate and permit work on any portion of the bus and switching equipment. The

switchboard they are incased in ebony asbestos board for protection. The main negative copper bus is installed on wall brackets in the space beneath the converters, and all return feeder cables are extended over to this bus instead of the negative busbar being carried by long extensions over to a point near the negative-cable entrance, as is usually done.



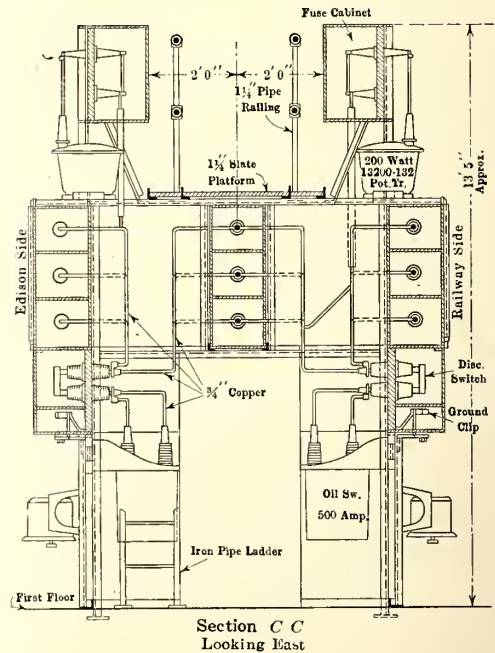
CHICAGO SUBSTATION—FIG. 4—INCOMING HIGH-TENSION CABLES AND CONNECTION TO BUSES

railway buses are sectionalized for each rotary. From the lighting and railway buses the connections pass through the oil switches, down through the floor in fiber pipes and across in opposite directions underneath the floor to the transformers (see Fig. 2). Both the lighting and the railway transformers are placed in the basement with the terminals projecting through an opening in the floor above. On the lighting side of the station the connections extend from the transformer beneath the floor and up through oil switches to the 4000-volt, three-phase buses and secondary feeder, switching and regulating apparatus.

On the railway side, the low-tension terminals of the transformers are connected, by means of bar copper, directly to the starting panels located at the edge of the openings in the floor over the transformers. The starting panel for each machine is thus placed in front of the machine it controls and the shortest possible distance from the transformer, making the copper runs as short as expedient with good clearances. Bar-copper connections, extending underneath the floor again, connect the starting panel switches to the rotary collector rings, and other bar copper conducts the direct-current output of the machines to the railway switchboard along the south wall of the building. Where these positive machine leads pass up through the floor behind the

ARRANGEMENT OF RAILWAY SWITCHBOARD

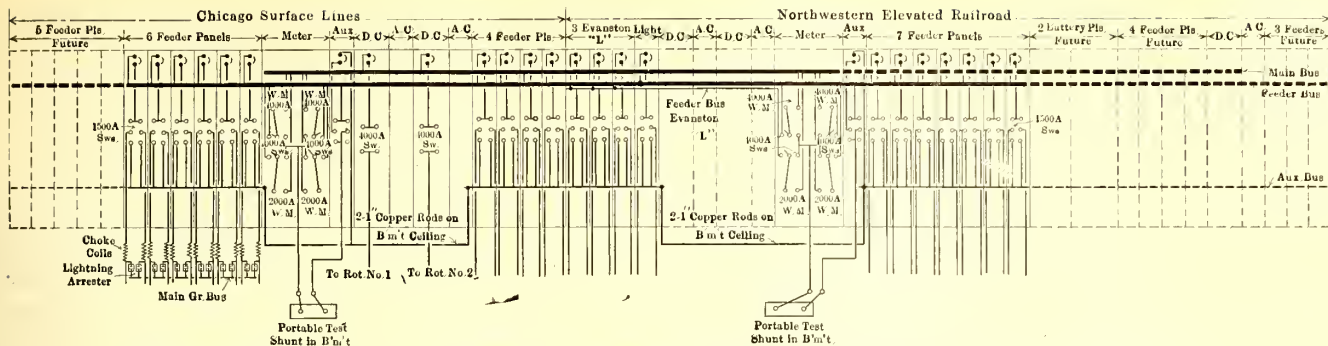
The railway switchboard is arranged to serve the two customers which purchase energy at 600 volts, namely, the Chicago surface and elevated lines. It is set on a wood beam placed in the concrete floor and extending above it about 4 in. The entire framework is insulated from ground. The machine panels are located in groups of two in the switchboard at points nearest the two machines controlled. This arrangement saves the long runs of copper necessary from some of the machines to the switchboard when all machine panels are grouped together. By partially distributing the copper along the entire board it facilitates repair and avoids the concentration of the very heavy 600-volt buses at one point. These buses are supported on iron and marble brackets on the switchboard framework. The rotary converters are connected to the main bus on the back of the switchboard through 4000-amp. knife switches. This main bus extends along the board to include meter panels for the two companies and will eventually be extended to include a third future machine panel, the second pair of machine panels being already included though not



CHICAGO SUBSTATION—FIG. 5—SECTION THROUGH BUS STRUCTURE SHOWING TRANSFER BUS TIE CONNECTIONS

installed. From this main bus, which places all rotaries in parallel on the direct-current side, current is supplied to each of the two sections of feeder bus, one for each customer, through the meter panels (see Fig. 6).

No attempt is made to meter the energy output over each outgoing feeder. Only the total output to each customer is measured. For this purpose a meter panel for each company is provided on which two 4000-amp. and two 2000-amp. Thomson watt-hour meters and one-half hour recording demand meters are mounted. On



CHICAGO SUBSTATION—FIG. 6—BUSES AND FEEDER CONNECTIONS ON REAR OF RAILWAY SWITCHBOARD

this same panel are four 4000-amp., single-pole, double-throw switches which are inserted in the circuit between the main bus and the feeder bus. They are so connected that their position governs the amount of watt-meter capacity from 2000 amp. to 12,000 amp. in 2000-amp. increments. This concentration of the meters in large units on one panel makes it possible for the operator to vary the number of meters cut in the circuit according to the load carried and thus to keep the meters working nearly at their capacity and obtain the most accurate record of output. It also greatly facilitates the testing of meters, and for this purpose a special test panel is installed in the basement and leads are run down to it from one pole of each of the double-throw switches on the meter board. Any meter can thus be quickly placed in the test circuit and readily tested. The former practice of placing a meter on each feeder panel necessitated the location of meters very low on the panels, making them hard to test and read, and also making it necessary that the individual meters operate at low efficiency a large part of the time.

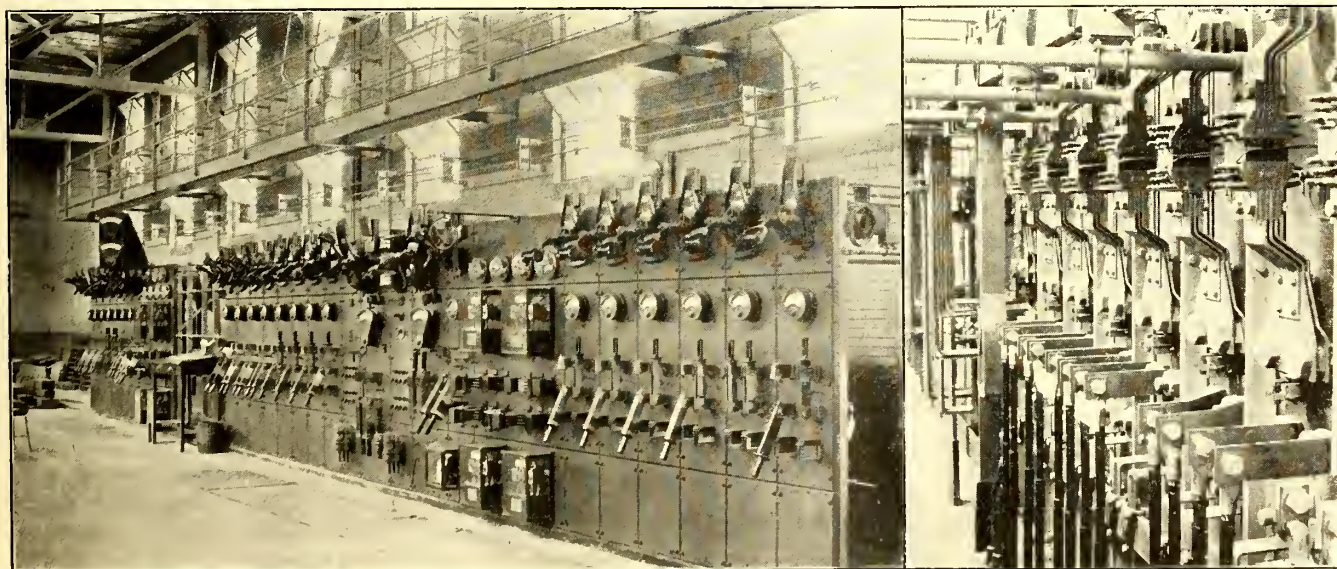
An auxiliary feeder panel which, by means of the auxiliary bus, Fig. 6, may be put in place of any feeder panel, is installed for each customer. This auxiliary bus is carried along the switchboard behind the feeder panels but is connected across the intervening meter and machine panels by means of two 1-in. copper rods. These are carried on the basement ceiling in order to keep the rear of the switchboard as accessible as possible. The auxiliary panels are equipped also for use

as part of the meter test circuits and connected with the portable test shunts in the basement.

All feeder-cable risers at the rear of the switchboard come up through the slate floor pieces in a vertical position without any bends above the floor level, making a very neat wiring layout. Any lateral offset necessary to dodge the floor beams is taken care of by a right or left-hand bend in the bar connecting the riser to the panel.

On the short outgoing railway feeders an arrester, magnetic blowout and choke coil are installed for protection against any kind of heavy surge. No protection is provided on the long cables or on cables which extend 600 ft. or more from the station underground. The outgoing cable sheaths are bonded and connected to the stray current bus installed along the south wall of the basement. The circuit from thence leads through the stray-current testing panel, also installed in the basement.

A 115-volt Edison storage battery in the basement furnishes energy for the control apparatus and emergency station lighting. On the switchboard feeder panels a spring plunger switch, which extends through the board and projects underneath the knife switch, furnishes an automatic means of cutting out the circuit breaker alarm bell when the particular feeder is not in use. When the knife switch is closed the plunger is forced back, closing the circuit through the alarm bell so that the latter will ring whenever the circuit breaker kicks out and will stop when the switch is opened.



CHICAGO SUBSTATION—RAILWAY SWITCHBOARD AND VERTICAL RISERS AND METER SHUNTS ON BACK

Bay State Opens Mileage Rate Case

Company Proposes Copper-Zone System for Interurban Territory—Two, Two and a Half and Three-Cent Zones Established on Basis of Relative Traffic Density

BEFORE the Massachusetts Public Service Commission on Nov. 19 the Bay State Street Railway, Boston, Mass., opened its case for a new schedule of fares in interurban territory. In opening S. H. Pillsbury, counsel for the company, said that the proposed rates are based upon a "copper-zone" or "mileage" system. In this connection he called attention to the recent report of the committee on public utility rates of the National Association of Railway Commissioners. This report, which was abstracted in the *ELECTRIC RAILWAY JOURNAL* of Oct. 27, page 765, ended with the statement that "a rate on a mileage basis with a minimum charge seems to be the most promising resource available" to prevent the crippling or destroying of street railway service.

Continuing, Mr. Pillsbury said that matter of particular interest in relation to the electric railway situation in Massachusetts is the report of the investigation carried on by the research division of the electrical engineering department of the Massachusetts Institute of Technology in relation to electric railway fares. This report, which has just been published in book form, was reviewed in the issue of Oct. 13, page 706. The general conclusion in the book Mr. Pillsbury quoted as follows:

The flat-rate fare system as used on practically all of the street railway lines in this country as an inheritance from the horse-car days, is not now the proper or the best system for the present and the probable future street railway conditions. It is in many cases inadequate (at 5-cent rates) to meet the total cost of good service; it is too inflexible to meet changing conditions in the costs of labor and material or to provide for an increasing average length of haul, and it is discriminatory between long and short rides. It appears that the only reasonable, just and generally satisfactory way to take proper care of present conditions and to prepare for future conditions is for the street railways to revise their fare systems on a basis more nearly approximating distance or zone rates. The system need not be an exact mileage rate, nor even duplicate the European method of very short stages, but some modification of fares involving the element of distance is becoming increasingly necessary.

This system, Mr. Pillsbury said, establishes a small increment of fare so that the charge can be made to vary in accordance with the length of ride, and does away with discrimination in that the ride over one zone and into another does not result in doubling the fare as at present, but simply adds a proportionate part of the fare. For example, the ride through one fare limit and into a second at the present time would cost 12 cents, where with the mileage system the fare would probably be 8 cents or 10 cents. Moreover, the latter system provides a more flexible plan whereby in relation to cities the central portion may be enlarged or contracted to suit varying conditions; that is, instead of making a person on the border of a large city pay 12 cents when it is necessary to increase fares, a zone may be inserted to include this suburban territory and make the fare something like 8 cents.

MILEAGE SYSTEM FOR ONLY INTERURBAN TERRITORY

The Bay State Street Railway, Mr. Pillsbury averred, is not now attempting to apply a mileage system to all

of its lines in Massachusetts. In the rate decision rendered on Aug. 31, 1916, the commission recognized that a distinction in the rate of fare between the urban and suburban sections was proper and in the public interest. The system serves urban, suburban and interurban territory. A 6-cent fare was permitted by the commission in general upon the interurban routes and the increase requested for the urban and suburban routes was denied. On July 3, 1917, the commission permitted an extension of the 6-cent fare to the urban and suburban communities, with the qualification that the company should sell twenty tickets for \$1.

The proposed mileage schedule deals only with the territory in which the 6-cent fare was first established. The reasons for this are two: (1) Because the commission, in the last order relating to the urban and suburban territory, required that the fares authorized should remain in force for a trial period of six months, namely, until Jan. 15, 1918. (2) Because the copper zone system is probably not workable in the densely populated centers, and the company is confident that it is workable in the territory now attempted to be covered.

BASIS OF LAYING OUT TWO, TWO AND ONE-HALF AND THREE CENT ZONES

Density of traffic as represented by revenue per mile of track and revenue per car-mile were the factors considered in determining whether the rate should be 2, 2½ or 3 cents per mile upon a particular route. In general, Mr. Pillsbury explained, those sections having a light density of traffic were put upon the 3 cents a mile basis; those with more heavy density of traffic upon the 2½ cents a mile basis, and the remaining ones, which constitute the larger portion, upon the 2 cents a mile basis. It was necessary to consider the two items representing density of traffic because revenue per mile of track shows the use that is made of the permanent investment, while the revenue per car-mile, while indicating this to some degree, also represents in a more direct way the operating charges incident to providing the service.

There were some exceptions made to this general plan of determining the proper fare where the routes of light traffic density were adjacent to larger communities. An instance of this is the Salem Willows-North Saugus route, which, on account of its proximity to Lynn, was put upon a 2-cent basis. It is not pretended that the rates established in the various zones are accurately based upon allocated investment. They are, in the aggregate, not sufficient to yield an amount equivalent to the cost of the service rendered and are based in relation to each other upon the relative density of traffic.

The minimum of 2 cents a mile was established largely on account of precedent. This rate has been generally recognized as a fair minimum for light territory, both in electric railway and steam railway fares. In many cases where the 3-cent maximum has been established, it would be out of the question to put into effect a rate which would be sufficient to establish those particular routes upon a paying basis. Such a rate would be so high as to be prohibitive and would result in tremendous traffic losses. It was thought, therefore, that the maximum was best taken at 3 cents a mile. The large amount of time and great expense which would

be involved, Mr. Pillsbury said, in an attempt to subdivide more accurately the various routes for the purpose of rate-making were prohibitive.

RECORD OF EARNINGS

The financial results of the last few years of operation show in general an increase in gross revenue but an alarming decrease in net, owing to corresponding increases in material and labor costs. The application of this copper-zone system to the territory in question, it was said, is expected to result in an increase of revenue, although in many instances fares for particular rides will be reduced.

Stated in terms of percentage increase or decrease in comparison with the year 1914, the income record for 1915, 1916 and 1917 is as follows: In 1915 operating revenues decreased from 1914 by 0.79 per cent. In 1916 they increased over 1914 by 3.97 per cent. In 1917, to June 30, they increased 9.67 per cent, and to Sept. 30, 11.83 per cent. Operating expenses in 1915 increased over 1914 by 3.62 per cent, and in 1916 they

increased over 1914 by 14.16 per cent. In 1917, to June 30, they increased 37.68 per cent, and to Sept. 30, 32.02 per cent.

Computing by years the additional revenue required on the basis of the decision of the commission of Aug. 31, 1916, Mr. Pillsbury gave the following results: For 1914, additional revenue required over that received, \$588,816; for 1915, \$872,432; for 1916, \$1,052,740, for year ended June 30, 1917, \$1,529,398; for year ended Sept. 30, 1917, \$1,621,706; for 1917 (last three months, estimated), \$1,618,151.

The cost of coal for the years ended June 30, 1914 to 1918, inclusive, was as follows: 1914, at \$3.70 a ton, \$618,000; 1915, at \$3.55 a ton, \$600,000; 1916, at \$3.80 a ton, \$637,000; 1917, at \$4.50 a ton, \$758,000; estimate for 1918, 180,000 tons at \$8.16 a ton, \$1,469,000. The estimated cost for 1918, it was stated, will undoubtedly be raised by the increases in miners' wages now authorized, and further by the increases in railroad freight rates now being considered by the Interstate Commerce Commission.

Union Freight Terminal at Kansas City for Interurban Lines

Four Roads Operating Into Kansas City, Mo., Will Use Union Freight Station Opened Recently by Separate Company—Unification of Roads' Facilities Attracts Freight Business and Overcomes Competition

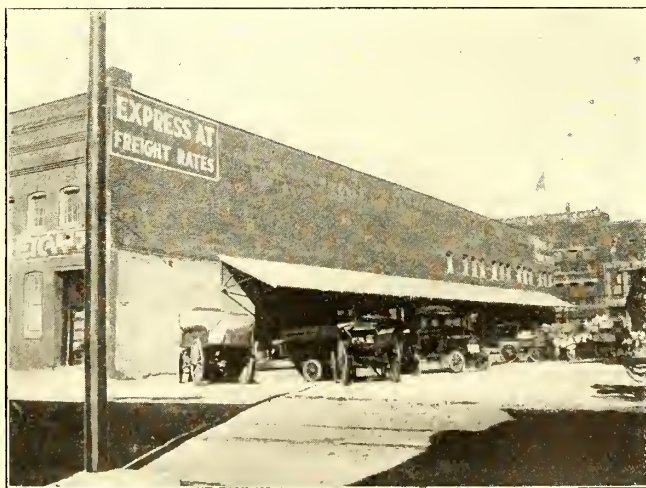
A UNION freight and express station for the use of several interurban electric railways entering Kansas City, Mo., was opened for business in that city on Oct. 10. The station is being operated by the Kansas City Interurban Freight Terminal Company, which has an authorized capitalization of \$100,000 in stock and \$100,000 in bonds. All the stock and \$75,000 of bonds are outstanding. The following permanent and operating officers of the company were elected on Oct. 31, to succeed those who were in temporary charge of the organization of the property and the building of the station: J. R. Harrigan, president; J. F. Hol-

man, vice-president; E. S. Bigelow, secretary and treasurer. These gentlemen, together with J. J. Heim, W. S. Tuley, C. F. Holmes and F. P. Dickson, were elected to the board of directors, all of whom are actively engaged in the electric railway business.

The stock of the company is owned by interests associated with the Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo., and the Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan. These two interurban roads and the Kansas City & Western Railway, Kansas City, Kan., and the Kansas City, Lawrence & Topeka Railroad, Kansas City, Mo.,



KANSAS CITY FREIGHT TERMINAL—NORTH END OF UNION STATION

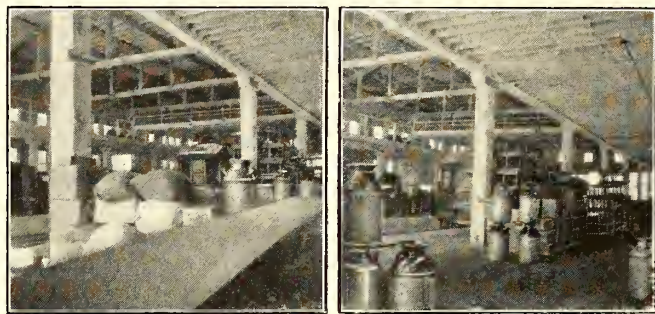


KANSAS CITY FREIGHT TERMINAL—TEAM SIDE OF STATION FOR OUTGOING FREIGHT

have entered into contracts for the use of the union terminal. The expenses of operation will be pro rated, a charge for a minimum tonnage per year being required, based on the present volume of freight business. One interurban road, the Strang line, which has a freight depot about five blocks from the union terminal, is doing a considerable express business but will operate independently.

LAYOUT OF TERMINAL FACILITIES

The terminal building is 180 ft. long, extending north and south from Third Street to Fourth Street and is half a block wide, the west side being flush with the



KANSAS CITY FREIGHT TERMINAL—OUTGOING FREIGHT ON STATION PLATFORM

property line on Wyandotte Street. The structure consists of two brick buildings, each 27 ft. wide, covered by one roof and separated by a 36-ft. space for the passage of cars. Stucco fronts above the car entrances at each end join the two units, which are two stories high. On the first floor of the west unit are the offices of the company, which occupy about 20 ft. of the 180-ft. length. The remainder of that floor consists of space for incoming freight, with a small office midway. The first floor of the east unit is practically all dock space for outgoing freight. The second floor of each unit consists only of open space without partitions, with the exception of rooms above the company's offices. The floors do not extend over the tracks, there being only a "bridge" between the two units. A basement was built under the entire building and may be used later for storage.

The sidewalk space on Wyandotte Street beside the building is depressed and paved and is used with the permission of the city by wagons and trucks for loading inbound freight from the station platform. On the east side of the building is a canopy and concrete platform where outgoing freight is handled. The adjacent team yard, 47 ft. wide, is paved with cement, and has a storage track along the side away from the building. Of the three tracks within the building the middle track is used for storage and the east and west tracks are used for outgoing and inbound freight respectively. The three tracks can accommodate eleven cars. Tracks have been built on both Third and Fourth Streets, with switches leading to the tracks in the building and to the storage track in the yard.

ADVANTAGES OF NEW FREIGHT SERVICE

The new terminal is near the warehouse and wholesale district, from which the haul is not only short but nearly on a level. One of the largest warehouses is only a block from the station. The need for the

union freight terminal and its advantages have been plainly demonstrated during the short time that it has been in use. Since its opening, the freight business of the roads has greatly increased, and wholesale houses have voiced their appreciation of the present facilities. Whereas, for instance, one carload of freight had been carried occasionally by the Kansas City, Clay County & St. Joseph Railway from Kansas City to St. Joseph, Mo., several carloads are now hauled twice daily. A radical increase in l.c.l. freight, or less than carload shipments, between the two cities has been one of the most notable indications of the need for the station. Wholesalers can haul on one truck goods destined for various points along the different lines, whereas formerly separate trips had to be made to the several stations, and, in fact, these trips were not made when it was easier and cheaper to truck to the steam railroad freight terminals. Grocers not only of Kansas City but of the larger towns served have already extensively used the more flexible facilities, and their patronage is increasing. The freight rates on the interurbans are the same as those charged on steam roads in the territory.

SERVICE AND EQUIPMENT OF THREE ROADS USING UNION TERMINAL

Among commodities which afford big possibilities for trolley express business are meat packers' products, shipments of 17,000 lb. a day from one packer now being not unusual. Most of the Kansas City packers have houses also in St. Joseph, and the Kansas City, Clay County & St. Joseph Railway offers a means of equalizing the supply in the two markets. It formerly required from four to six days for a shipment from one of the cities to the other, while on this road three hours is a maximum. This company's freight equipment consists of five steel motor cars and five standard box cars,

IMPORTANT NOTICE

Kansas City, Clay Co. & St. Joseph Ry. Co. *Quick Dependable Service*

On and After Wednesday, October 10th, 1917

ALL THIS COMPANY'S FREIGHT BUSINESS WILL BE TRANSACTED AT THE NEW KANSAS CITY INTERURBAN FREIGHT TERMINAL COMPANY STATION, FOURTH AND WYANDOTTE STREETS.

The station at THIRD AND CHERRY STS. will be closed on and after October 10th, 1917.

SCHEDULE OF FREIGHT TRAINS

ST. JOSEPH DIVISION

LV. Kansas City .. A. M. 10:00	P. M. 3:30	LV. St. Joseph .. A. M. 10:00	P. M. 2:40
Ferrelview .. 11:20	4:40	Dearborn .. 11:05	3:50
Camden Point .. 12:00	5:30	Camden Point .. 11:30	4:00
Dearborn .. 12:30	5:45	Ferrelview .. P. M. 12:05	4:30
AR. St. Joseph .. P. M. 1:05	6:25	AR. Kansas City .. 1:10	5:30

EXCELSIOR SPRINGS DIVISION

LV. Kansas City .. A. M. 8:55	P. M. 2:55	LV. Excelsior Springs .. A. M. 6:05	P. M. 12:05
Liberty .. 10:00	4:00	Moseby .. 6:15	12:15
Moseby .. 10:52	4:52	Liberty .. 6:45	12:50
AR. Excelsior Springs .. 11:10	5:10	AR. Kansas City .. 7:50	1:45

SHIPMENTS MUST BE ON HANDS 20 MINUTES BEFORE LEAVING TIME OF TRAINS SHOWN ABOVE TO INSURE MOVEMENT ON ANY PARTICULAR TRAIN.

Both Phones Main 3984 J. F. HOLMAN, General Freight Agent, Kansas City, Mo.

KANSAS CITY FREIGHT TERMINAL—CARD USED TO ADVERTISE FREIGHT BUSINESS

besides several flat and gondola cars all used in local service. Physical connection is made with steam railroads, but all such interchange freight is handled in foreign cars. Some of the methods employed by this company to develop its freight traffic were told by J. F. Holman, general freight agent, in an article which appeared in the ELECTRIC RAILWAY JOURNAL for July 7. The company's freight station has become inadequate for its business, chiefly on account of the congestion of wagons and trucks.

The Kansas City & Western Railway has had in service four box cars, two flat cars and an express motor

car. It has done a good freight business for several years, mostly in hauling poultry, dairy products and farmers' supplies and also roofing paper, electric supplies, dry goods and similar commodities to merchants in Leavenworth, Kan., and other towns. This road offers the advantage of direct shipment from Kansas City, Kan., to Leavenworth, where there are several large factories as well as the State penitentiary with its industries. The company does not haul freight to Fort Leavenworth and was not permitted to build a siding there as supplies are delivered by the railroads, which have docks at the fort. However, its freight business has increased 23 per cent during the last year. This increase is due, in part, to the retail trade of Leavenworth merchants which has been increased on account of the proximity of the troops.

The present cars of the Kansas City & Western Railway cannot be brought into Kansas City, Mo., as they are too high for the Eighth Street tunnel and too long for the curves. The company has a freight station on the Kansas side and has trucked shipments from a freight station at Third and Grand Streets, Kansas City, Mo., which has heretofore been used jointly with the Kansas City, Kaw Valley & Western Railway and the Strang line and will now be used by the last-named road. The Kansas City & Western is remodeling a passenger car for use in hauling freight to the new union terminal. W. G. Holmes is general freight agent of the road. He is a son of C. F. Holmes, president of the company.

The Kansas City, Kaw Valley & Western Railway, of which J. D. Cornell is traffic manager, operates at present to Lawrence, Kan., where there is a cement works, serving Bonner Springs, and is being extended to Topeka. It has two electric locomotives which handle carload freight in conjunction with the Rock Island, Kansas City Southern and the Kansas City Terminal railroads through the terminal connection near Kansas City, Kan. This business averages twenty carloads a day. The company has also four 50-ft. motor express cars and one 40-ft. trailer for l.c.l. freight, each of 60,000-lb. capacity. It has been using the freight station at Fourth and Minnesota Avenues, Kansas City, Kan., jointly with the Kansas City & Western Railway.

Association Methods Criticised

At the recent convention at Chicago of the Associated Business Papers, the following resolution was passed:

Whereas, Certain associations of business men permit the name and influence of their associations to be used in the solicitation of advertising for their association publications in a manner that frequently is highly objectionable,

Resolved, That The Associated Business Papers, Inc., in convention assembled in Chicago, this 13th day of October, 1917, do hereby condemn such solicitations as an undignified and improper perversion of association influence, far removed from the original purpose of any business organization, and equally removed from the methods that should govern the sale of legitimate advertising.

On account of the many employees of the New York, New Haven & Hartford Railroad who have entered military service, women are now employed as crossing tenders, station agents, telegraph operators and also in the stores department in the shops. The company has opened a free school to instruct the women in telegraphy and ticket and freight accounting.

How to Tell Fraudulent Financial Advertising

Investment Bankers' Committee Prepares Simple Working Guide for Periodicals Interested in Truthful Financial Publicity

THE committee on fraudulent advertising of the Investment Bankers' Association of America has prepared a simple guide to assist advertisers, advertising agencies, publishers and government authorities to eliminate fraud and misrepresentation from advertising copy of a financial character. The information has been issued in pamphlet form, and copies can be secured from the committee, whose headquarters are at 111 West Monroe Street, Chicago, Ill.

When the character of the advertising appears to be satisfactory, it is said, and there are no flagrant misrepresentations in the copy, the more subtle hazards in the advertised securities can generally be ascertained by requiring information along lines shown in part as follows:

Property: What constitutes the property? Is it actually built and in operation? Where is it located? What is the value determined by a competent appraiser, audited by a certified public accountant? What is the value of the property for the purpose of operation? How long has it proved successful? What is the output? Does the company own or lease the property?

Earnings: What are the actual earnings as audited by a certified public accountant? What are the detailed earnings over a period of years? Are the earnings estimated instead of actual? If estimated, by whom? Estimates should not be made essentially on the basis of earnings of prosperous companies in the same line of business, for different management will not operate with equal success.

Investment Income: What dividend or interest is paid on securities offered? If income is being paid or promised, who has audited the books for the company?

Price of Securities: If the par value of securities offered is \$10 or less, an investigation is desirable; if it is below \$1, this investigation is imperative. Moreover, it is bad practice to offer securities for sale with the statement that the price will be advanced at a certain day.

Financial Statements: Any statements mentioning figures should be susceptible of proof through an income statement and balance sheet audited by a certified public accountant. These two statements should be given as of one date. From these can be calculated the tangible net assets per share of stock or the value of property securing each bond. If these fall materially below the selling price of securities, the risk is considerable.

Equity: Misrepresentations are often made when an issue of treasury stock is offered. Care should be exercised that a large amount of stock is not issued on a disproportionately small amount of property. When common stock is offered as a bonus with preferred stock, it is well to find out what risk the promoter has taken in putting out the preferred stock. The public may be risking all the money and the promoter only his time, with the chance of profit inversely arranged.

Management: What are the names of the officers and the directors? The management should include men trained in all the branches necessary to the successful operation of the business. A properly financed company usually has one or two bankers or experienced financiers. If there is no such person, special inquiry should be made as to the permanent financial plan under which the company is securing its money.

For the purpose of assisting in eliminating fraudulent financial advertising, the committee of the Investment Bankers' Association is prepared to co-operate with publishers and other bodies. To this end it maintains a file of information which is available to persons interested. The committee desires to secure as much information as possible regarding the record of any suspicious or definitely bad promotion.

State Rate-Making Power Upheld

New York Second District Commission Decides It Has from State Full Power to Revise Rates Upward as Well as Downward, in Spite of Maximum Set by Old Laws or Local Franchises—Six-Cent Fare Authorized for Huntington Railroad

THE Public Service Commission for the Second District of New York on Nov. 20 handed down a very important decision recognizing the paramount right of the State to increase rates through its regulatory body in spite of the maximum set by old laws or by local franchises. The ruling was in one of the numerous 6-cent fare cases before the commission—that of the Huntington Railroad, running from Amityville to Huntington Harbor, Long Island.

A summary statement of the decision is that the commission has followed the Court of Appeals in the Ulster & Delaware case (218 N. Y. 643) and the Appellate Division for the Third Department in the New York & North Shore Traction case (175 App. Div. 869). After authorizing the advance of the company's fares from 5 to 6 cents the commission concludes: "This determination and order may be reopened at any time if and when it may appear to the commission that the controlling reasons for allowing an increase of fares in excess of those which otherwise would legally obtain no longer exist."

THE FUNDAMENTAL QUESTIONS INVOLVED

Two questions were squarely presented in the case:

1. Whether Section 181 of the railroad law, which limits a fare for a continuous ride within any city or village to 5 cents, precludes the commission from authorizing a 6-cent fare.

2. Whether the acceptance by an electric railway corporation of a franchise containing a 5-cent fare condition precludes the commission from increasing such fare to 6 or more cents for one continuous ride in the same city or municipality.

The commission has decided that Subdivision 1 of Section 49 of the public service commission law was intended by the Legislature to vest power in the commission, and has made it the duty of the commission, where it finds upon a sufficient showing that in fact the maximum rates or fares chargeable either under Section 181 of the old railroad law or under the local franchises are insufficient to yield reasonable compensation for the service rendered and are for that reason unjust and unreasonable, to authorize the increase of such fares. The principal opinion is by Commissioner Carr, who cites all of the decisions and all of the statutes of the State of New York having any bearing, historical or otherwise, upon the question. There are concurring opinions by each of the other commissioners.

OLD RAILROAD LAW NOT BINDING

In discussing the first question, Commissioner Carr mentions Section 33 and Section 49 of the public service commission law, covering the regulation of rates, Subdivision 2 of the latter covering the investigation of operating practices and equipment, and Section

50 providing for the ordering of improvements and additions.

Section 33, he states, permits the commission to prescribe just and reasonable maximum fares for all forms of reduced rate passenger tickets on steam railroads and electric railways.

Section 49 provides that whenever the commission shall be of opinion * * * that the maximum rates, fares, or charges chargeable to any such railroad or electric railway corporation are insufficient to yield reasonable compensation for the service rendered and are unjust and unreasonable, the commission shall * * * determine the just and reasonable rates, fares and charges to be thereafter observed and in force as the maximum to be charged for the service to be performed, notwithstanding that a higher rate or charge has been heretofore authorized by statute.

Subdivision 2 authorizes the commission to investigate the regulations, practices, equipment and appliances of an electric railway in respect to transportation of persons and property and to determine the just and reasonable safe, adequate and proper regulations, practices, equipment, appliances and service thereafter to be enforced and to be observed and used in the transportation of persons and property and to fix and prescribe the same by order, and it shall be the duty of every electric railway to observe and obey the requirements of every such order and to do everything necessary to secure the absolute compliance therewith by all its officers, agents and employees.

Section 50 authorizes the commission to order changes and improvements in road and equipment and additions thereto if in the judgment of the commission the same are necessary to promote the security or convenience of the public or employees or in order to secure adequate service or facilities for the transportation of persons or property.

Continuing, the commissioner says:

"What was the purpose of these sections giving such drastic powers to the commission and authorizing it to place heavy burdens on the electric railways, unless the commission was at the same time authorized to give such relief in the way of increased fares as might be necessary to enable the corporation to receive a fair return on the increased investment made necessary by the orders of the commission? It cannot be successfully urged that the commission has the right to order such improvement in service and equipment as might be necessary for the safety of the traveling public, even though this action on its part might in effect operate to confiscate the property of the corporation, for this is contrary to the law of the land.

"What then does the law contemplate in this respect? The answer is that the commission is empowered to require the corporation to give proper service, and, on the

other hand, to require the public to pay reasonable rates for such service. The law as it exists at the present time requires the commission to determine the just and reasonable rates which will enable electric railways to earn a reasonable return upon the value of the property actually employed in the public service and to provide a reserve for surplus and contingencies.

"So we believe it may be said to be settled that the Legislature has full power to delegate rate-making powers to the Public Service Commission and that the commission has full power to fix just and reasonable rates for carriers and public service corporations and that the fixing of rates is a proper exercise of the police power of the State."

It might be claimed, Commissioner Carr said, that because Section 181 of the railroad law does not specifically provide for an increase in the rate of fare, therefore the only power of the Legislature or the commission is to reduce that rate. On this point he remarked:

"We think that such a decision would be quite untenable because it would be equivalent to saying that the Legislature is powerless to amend a general law no matter what the necessity might be or how important for the welfare of the public. While we believe that the use of the word 'regulate' implies an increase as well as a reduction in fare, yet it may be that when the word was first used by the Legislature it was intended to mean any revision of the fares charged by electric railways and that the word 'reduce' was used to apply to rates charged by electric railways in excess of 5 cents pursuant to special acts of the Legislature, but in any event it is entirely inconsistent with the public service commission law to attempt to hold that the only power given the commission is to reduce fares when the statute particularly imposes upon it the duty to determine the just and reasonable rates which are necessary in order to provide a reasonable return upon the value of the property employed in the public service."

MUNICIPALITIES CANNOT DETERMINE FARE

The other fundamental question, involving the control of local franchises over fares, is discussed by Commissioner Carr as follows:

"It is settled beyond question that municipalities have no right to impose conditions in franchises other than those which the statute gives them the power to exact. The fact that conditions restricting the fare within the municipality are imposed in a franchise does not deprive the Legislature of the supreme power to determine what conditions shall be imposed upon an electric railway corporation. There is no decision in any of the courts in this State which attempts to hold that the Legislature in the enactment of general laws governing the creation and operation of railroads, whether electric surface or otherwise, has in any respect conferred upon the municipalities the power to fix a rate of fare in a specific amount. It has delegated the power at different times to fix maximum rates, but this was always subject to the right of the Legislature to intervene and revise and alter such rates as might be fixed under the delegated power.

"As further illustrating that the municipalities never had any power to exact conditions beyond those prescribed by the Legislature, we call attention to the

case of *New York Cable Company vs. Mayor, etc.*, of New York (104 N. Y. 1). In this case the commissioners appointed under the provisions of Chapter 606 of the laws of 1875 attempted to exceed the powers which were given in the act under which they were appointed, and the court held that powers beyond those authorized by the statute could not be conferred upon the railroads and that, on the other hand, conditions beyond those covered by the statute could not be imposed. A case along the same lines was decided in 1887, *Matter of Kings County Elevated Railroad* (105 N. Y. 97), in which it was decided that the Common Council of the city of Brooklyn had no power to impose conditions in a franchise or consent to the operation of a surface railway which related to matters which were under the control of the Legislature and the commissioners appointed under the provisions of Chapter 606 of the laws of 1875.

"We believe that all of the cases dealing with fare conditions in franchises can be harmonized without difficulty. It will be remembered that beginning with the act of 1884 relating to electric railways there was and has been a specific provision in the law requiring the consent given by the municipality to contain a clause setting forth that it is given upon the express condition that the provisions of the act relative to such railways shall be complied with. Therefore even though the municipality should give its consent to the construction, maintenance and operation of an electric railway in the public streets without attempting to set forth the condition in the franchise relative to fare which is contained in the statute, nevertheless the provision of the statute is binding upon the corporation and no greater force or effect is given to it and no greater obligation is placed upon it than that which appears in the statute in this respect. The mere reiteration of this condition in the franchise given by the municipality does not place an additional burden upon the corporation, nor does it operate to divest the State of any power which it may have and which it has always had to regulate the fares on electric railways.

"We are, therefore, of the opinion that notwithstanding the conditions in the several franchises granted to the Huntington Railroad which attempted to fix a 5-cent fare within certain specified territory, the same were only binding upon the company until such time as the Legislature should intervene for the purpose of regulating this rate of fare, and that this commission has the power, under the provisions of the law which created it, to revise the fare fixed in the franchises."

NEED OF HUNTINGTON COMPANY NOT DISPUTED

By reason of the fact that it presented clearly two questions, the first of which is common to nearly all of the electric railway applications before the commission and the second to a very large number of them, all the companies and all the cities, towns, villages and other municipalities interested adversely were notified of the hearing. As far as they desired, they were heard upon all of the legal questions involved. There was no dispute that the Huntington Railroad required increased revenue in order to enable it to pay its operating expenses. No community through which it runs objected by its Council to the applicant's case on the facts, nor did any of the inhabitants thereof or any patrons of the road.

A Playground for Employees and Their Families

Illinois Traction Property Has Provided Cottage and Equipment Whereby Employees May Enjoy a Real Vacation Rest at Almost No Expense

BY W. F. CARR

Formerly Engineer Maintenance of Way Chicago, Ottawa & Peoria Railway, Ottawa, Ill.

THE Chicago, Ottawa & Peoria Railway has utilized one of the many beauty spots along its line as a site for a recreation camp for its employees. This camp was provided not only for the recuperation of the sick families and delicate children of employees but for a playground for the healthy as well.

H. E. Chubbuck, vice-president executive Illinois Traction System, is a believer in close relationship with the workers under him. He regards the employees on the various properties under his management as a family. Needless to say, the managers of the various properties hold the same attitude toward the men under their supervision, and this is consequently true of F. E. Fisher, general superintendent of the C., O. & P. Many companies provide clubrooms for their employees, but he has gone a step further by supplying a place where the entire family of an employee may enjoy country life. It was to bring the families of the individual employees closer together and produce one big family in association and sentiment that he caused this camp to be built and equipped.

It is located 17 miles west of Joliet, Ill., on Aux Sable Creek, which is one of the many beautiful streams of which north-central Illinois abounds. Its clear, swift waters and rocky bed form an ideal place for the breeding and preservation of game fish. It abounds in bass, pickerel and pike. The company leases 5 acres of land on a bend in this creek and has constructed a dam to provide boating and bathing. A suspension bridge has been constructed across the creek by four cables of 7/16-in. seven-strand galvanized steel messenger attached to convenient tree trunks on the banks of the stream. A private drive leads from the public highway to the camp, and a station stop is made by the company's cars at a point directly opposite the camp and is about one-quarter mile from it.

There are two buildings in the camp, one a clubhouse 20 ft. wide and 50 ft. long, and a cottage, 22 ft. x 25 ft. The clubhouse has a kitchen 10 ft. x 20 ft., which

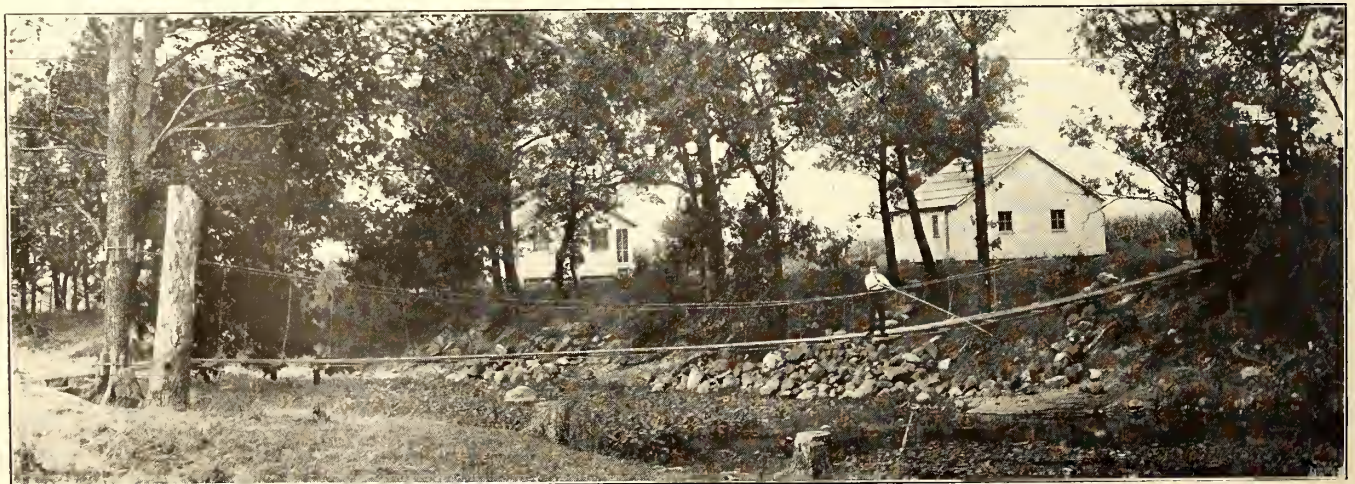


MAIN LIVING ROOM OF C., O. & P. OUTING CLUBHOUSE

serves all families; a dining or living room, 20 ft. x 29 ft., and two bedrooms, 10 ft. x 10 ft. A large fireplace 6 ft. long and 4 ft. high adds to the comfort and coziness of the living room in the clubhouse. The cottage is partitioned off to make two bedrooms. The cottage and clubhouse are furnished with cots, tables, chairs, cooking utensils, tableware, cutlery, a refrigerator, a kitchen range and an oil stove to be used instead of the range on hot days. The cottages and accommodations were arranged for their joint use by three or four families at a time.

The buildings are situated in a grove of trees and are painted white, from which was derived the name White City. From a flagpole in the foreground Old Glory floats during the day and a lantern shines at night when the cottages are occupied. A drilled well provides an abundance of good drinking water, and a cooling cellar has been constructed around the well pipe. Sanitary drainage was considered in the selection of the site, and it is one of the rules that each camping party must attend to the burning up and destruction of all waste.

This cottage outing plan helps in a measure to solve the vacation problem. When a man is let off for a few days' recreation and then is badly needed because of some emergency, he can usually be recalled within a few hours by sending word to the clubhouse. This is one of the rewards which a company receives in return for its interest and expense in building and maintaining the camp.



VIEW OF CAMP WITH SUSPENSION BRIDGE IN FOREGROUND

American Association News

The War Board Appointed by the Association Holds Another Full Meeting—The Milwaukee Company Section Elects New Officers; the Manila Section Discusses Electricity, and Section No. 8 Holds Its "Harvest Meeting"

War Board Meets Again

The Principal Subjects Discussed Were Promotion of Freight Traffic, Fuel Conservation, and the Provisions of the War Revenue and Priority Laws as They Affect Electric Railways

ANOTHER full meeting of the American Electric Railway War Board was held in Washington last week on Friday. The five members were in attendance with Secretary Burritt of the association, who has now been officially appointed secretary of the War Board. H. C. Clark was also present. Action was taken on a number of important matters. The board also discussed the matter of permanent headquarters in Washington, but no definite action was taken.

Britton I. Budd of Chicago, chairman of the sub-committee on traffic, reported that he was arranging for a joint meeting of the traffic representatives of a number of the electric railway companies in the Central States, together with the secretaries of the principal business associations, chambers of commerce and boards of trade in the same district. It was hoped at that meeting to develop suggestions for the more extended use of the electric railways for transportation. This meeting is only a starter. Other plans with the same objects in view are under consideration.

P. H. Gadsden, Charleston, S. C., to whom was referred the request of the Commissioner of Internal Revenue requesting the association to submit suggestions as to the administration and application of the excess profits provision of the war revenue act, so far as it relates to electric railways, reported that he had taken the matter up with a number of electric railway companies and that he hoped before long to be able to submit constructive suggestions.

Progress was also reported on the subject of fuel conservation. Action in this matter has already been taken up with the chairman of the Fuel Conservation Board, and it is hoped that a series of practical suggestions, including methods for flattening out the peaks, will soon be issued under the auspices of the board.

The board decided to take steps looking to the issuance by the Navy Department of an order similar to that issued by Major Curran, quartermaster, War Department, and mentioned on page 899 of the last issue of this paper. Chairman McCarter reported that he had officially notified the President and the Secretaries of the Army and Navy of the organization of the board, as requested at the previous meeting, and he was instructed to send a similar notice to the Chamber of Commerce of the United States.

Mr. Storrs then presented a letter from Chairman Daniel Willard, Advisory Commission, Council of National Defense, inclosing a resolution adopted by the council on Nov. 2, 1917, urging that steps be taken to secure complete co-operation during the continuance of the war from all of the transportation agencies. In

accordance with this resolution, Mr. Willard expects shortly to call a meeting in Washington of representatives of all of the different transportation interests, including the special committee on national defense of the American Railway Association, the committee on inland waterways, the committee on highway and motor transportation and the War Board of the American Electric Railway Association. Chairman McCarter was authorized to reply to this letter, assuring Mr. Willard of the full support in this matter of the electric railway interests and indicating the desire of these interests to co-operate as suggested. Mr. Storrs was appointed the official delegate of the board to the joint meeting.

Mr. Storrs then called attention to the wording of the provisions in the war revenue law imposing taxes on freight receipts and on express receipts, and said that it would be well to get a ruling from the Internal Revenue Bureau on what constituted the line of demarcation between express and freight, because the rates on these two classes of business were different, and on a great many electric railways it was difficult to differentiate between the two. Mr. Gadsden was appointed to take this matter up with the Internal Revenue Bureau.

Mr. Brady brought up the question of priority in the case of manufactured articles ordered by electric railways and the position which electric railways occupy under the priority order. Steps were taken to obtain this information.

The board decided to meet again in Washington on Friday, Nov. 23, and extended to President Stanley of the association an invitation to attend that meeting and subsequent meetings of the board.

Milwaukee Section Elects Officers

The Milwaukee Electric Railway & Light Company section held a meeting on Nov. 8, with sixty members in attendance. The following officers were elected for the ensuing year: President, F. A. Luber, promoted from secretaryship; vice-president, W. W. Cook; secretary, L. Beihoff; treasurer, R. Regner. G. M. Kuemmerlein and A. J. Kills were elected directors for a three-year and a one-year term respectively.

Owing to the length of the program two talks scheduled had to be postponed. The first talk was on "Practical Co-operation," by G. W. Kalweit, auditor of the company. Among other advantages of close co-operation the speaker mentioned the importance of referring to the classification of accounts before making charges for materials and labor, thereby giving the proper distributions and lessening the work of the accounting department. He stated that the same spirit that is essential to the nation in the present world conflict should be applied in the work of each individual in the company's organization. His remarks were followed by G. M. Kuemmerlein, superintendent of transportation,

who discussed the possibility of employing women as conductors. He said that that would probably be necessary this winter owing to the large number of men entering government service.

H. A. Mullett, superintendent of rolling stock, gave an interesting talk on "Railway Gears," in which he traced the processes of gear manufacture from the mines to the finished product. The last talk was on real estate, by E. J. Evans, real estate agent. His remarks related to the distribution of real estate in Wisconsin in the early days and how a larger population necessitated further divisions. A few instrumental selections constituted the entertainment for the evening. A buffet luncheon was also served.

Electricity in Philippines Interests Manila Section

At a meeting on Oct. 2 of the joint section of the Manila Electric Railroad & Light Corporation, Manila, P. I., Francisco Santiago, foreman electric testing department, presented a paper entitled "Economic Influence of Electric Light and Power on Industrial Philippines." He reviewed the progress in the use of electricity for various industries in the Philippines, and explained how its use contributes toward making the islands economically independent. The discussion related principally to details with reference to local interests. Forty members were present, and three new members were added to the railway division of the section.

Section No. 8 Discusses Operation of Company's Power Plant

R. H. Dalgleish, electrical engineer, Capital Traction Company, Washington, D. C., was the principal speaker at the meeting of Section No. 8, held on Nov. 8. He discussed, with the aid of lantern slides, the operation of the company's main power plant. The address was supplemented by short talks on the details of the plant by A. H. Sparshott, engineer in charge; W. Locke, repairman, and D. J. Hogan, switchboard operator. This was the annual "harvest meeting" of the section. The auditorium was decorated with autumn leaves, corn shucks and fruits of the harvest.

Poor Food for the Dog

Donald Lowrie, in the office of Thomas Dreier, assistant to president Bay State Street Railway, Boston, Mass., has prepared copy for a car poster which is herewith passed on to those who are trying to get rid of the fixed 5-cent fare idea.

The poster would contain at the top a cut of a very large but painfully thin dog. He is on his back with paws sticking in air. A man is offering him a small portion of food, labeled "5 cents worth of dog meat," but the animal refuses to eat.


Underneath such a cut the following copy would be used:

Oh, see the dog!
What is the matter with the dog?
The dog is dying.
Why is the dog dying?
Because he is too weak to eat the 5-cents worth of meat.
You see, when the dog was a pup 5-cents worth of meat was enough.

But when the pup grew to be a big dog, the man still gave him only 5-cents worth of meat each day.
Now the dog is so weak he is going to die.
Oh, the poor dog!

Fighting the Huns with the Shovel

James J. Storrow, fuel administrator of Massachusetts, has just issued a striking poster showing the power-plant fireman how he can help fight against Germany by saving coal. Running boilers more efficiently is said to depend upon a dozen succinct admonitions, as shown in the accompanying cut. The poster is de-



**SAVE YOUR COAL
FIRE THE KAISER
HERE'S HOW!**

1. Keep boiler tubes clean from soot and scale both inside and outside.
2. Stop air leaks in boiler settings, flue doors, and cleaning holes.
3. Repair leaky steam pipes and valves.
4. Keep side and bridge walls free from ashes and clinkers.
5. Keep ash pit cleaned out.
6. Keep your fire thin as your draft allows.
7. Fire at short intervals and in small quantities.
8. Keep your fire bed level by spreading coal over thin spots.
9. Do not stir your fire unless necessary. To do so will cause clinkers.
10. Do not fire lumps larger than your fist.
11. Regulate draft with dampers not with ash pit doors.
12. Work your fire by your automatic damper, not your steam gauge.

JAMES J. STORROW,
Massachusetts Fuel Administrator

POSTER, IN COLORS, ISSUED BY MASSACHUSETTS FUEL ADMINISTRATOR, ADVISING POWER-PLANT FIREMEN HOW TO SAVE COAL

signed for service in all classes of steam plants and is being sent out in great numbers to Massachusetts generating stations.

With each poster there is being sent out, to superintendents of industrial and power plants, a printed statement asking them to co-operate in conserving New England's coal supply this winter. Besides hanging up the poster, they are requested to carry out the following suggestions: Keep the power plant in good repair, and stop all leaks in boiler settings, pipes and valves; cover exposed steam pipes with good non-conductor covering; have the boiler tubes kept free from soot and scale; keep daily records of the operating efficiency of the plant; the installation of automatic dampers will save coal and money; meter the steam bought or sold so that the one who saves will benefit. It is said that on request an inspector will be sent to investigate any plant, at a charge only enough to cover the bare cost of the services rendered.

EQUIPMENT and MAINTENANCE

HAVE YOU A GOOD WAY
OF DOING A JOB?

—*Pass It Along*

These Articles Have Been Selected to Provoke Thought and Stimulate Discussion. All of the Technical Departments Are Represented

Some Pointers on Snow-Fighting Equipment and Its Use

The Author Discusses a Number of the Lessons Which Have Been Taught by Recent Experiences of the Connecticut Company

BY P. NEY WILSON

Roadmaster New Haven Division The Connecticut Company,
New Haven, Conn.

A series of heavy snowfalls which occurred during the winter of 1915-1916, combined with a marked increase in vehicular travel, created an unusual condition with respect to snow fighting on the property operated by the Connecticut Company. The results of the experience during that trying period was a conviction that there must be provided better facilities for snow fighting, including additional equipment and a reserve force of operators.

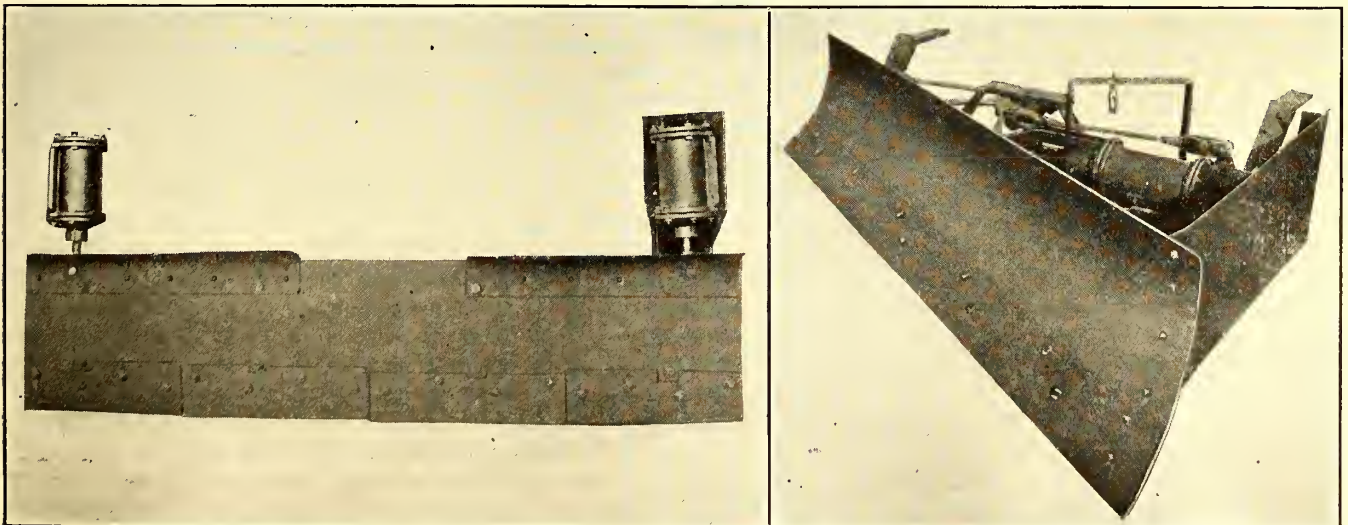
At a meeting of the American Electric Railway Association local company section held in January, 1916, the subject of snow fighting was formally brought up in a paper read by Harold Bates. This paper appeared in the issue of the *ELECTRIC RAILWAY JOURNAL* for Jan. 22, 1916, page 162. In this paper Mr. Bates outlined the experiences, successes and failures of other companies in the matter of operating an electric railway under storm conditions. Later meetings brought out a number of other short papers on the subject, as well as a spirited discussion in which many valuable suggestions were made. The result was that a snow-fighting committee was appointed with the writer as chairman, and

in due time a report was presented. The present article is based in part upon that report, which has not heretofore been published.

We may consider first the matter of equipment, with particular reference to the rolling stock in the possession of the Connecticut Company at the present time. It seemed wise in the first place that certain double-truck miscellaneous service cars be equipped with removable shears and side wings for leveling, thus converting the cars into snow-fighting units at a comparatively low cost. By thus equipping the service cars they are used much more continuously than otherwise and they do not lie idle for a good part of the year as do snow-fighting units used for that exclusive purpose. The cost of equipping one service car has been found to be about \$550.00, and we shall have a number of these in operation during the coming winter.

SNOW-FIGHTING EQUIPMENT FOR HEAVY CARS

Two equipments which we shall use are shown in the illustrations. In Figs. 1 and 3 is shown a steel flanger designed to go under the end of a dump car and built by the Russell Car & Snowplow Company of Ridgway, Pa. It consists of a shear made of $\frac{3}{8}$ -in. sheet steel plate with narrow wearing blades of the same thickness. This plate is placed diagonally under the underframe of the dump car and is movable vertically through a range of 3 in., being actuated by two air cylinders, one at each end. The movable plate slides in front of a rigid plate, with a space of $\frac{5}{8}$ in. between the two, four steel yokes being provided to maintain this ap-



FIGS. 1 AND 2—TWO EQUIPMENTS FOR SNOW FIGHTING, THE FLANGER AND THE SHEAR PLOW

proximate spacing. The rigid plate is mounted on four cast-steel brackets, carried from the under side of the side and center sills. Half-inch pipes connect the four cylinder ends to a four-way valve in the cab, by means of which the raising and lowering of the sliding blade is controlled.

Another device which we are installing is shown in Figs. 2 and 4. This is a shear plow point built by the Wason Manufacturing Company, Springfield, Mass., and is shown here adapted to a Standard Motor Truck Company's archbar truck. This truck is shown as used under a multiple dump car. The shear is of light sheet steel, mounted on an angle-iron frame attached to the truck in the manner shown. The shear is shod with a 1-in. beveled plate. The frame is made in two parts, a fixed part which is attached to the truck and the sliding

plows the shearing plates should be toothed for the purpose of cutting down high centers.

In regard to brooms our committee found that steel and rattan mixed are satisfactory for use in old broom heads on divisions where the snow is light and easily handled. On divisions where ice and very heavy snow accumulate on the tracks an all-steel filling should be used. When all-steel filling is used with wooden broom heads it is found that the holes in the latter become elongated and cut by the action of the broom in service. This trouble we have been able to avoid by the use of a steel plate on the outer surface of the broom head. Of course, the plates must be carefully drilled so as to match the holes with those in the broom head. We have obtained excellent results from brooms filled entirely with steel.

We also found that sweepers are more effective than plows for city streets, but the brooms in these should be driven by gearing and not by sprocket chains.

Among other subjects studied by us was the equipment of miscellaneous articles which should be furnished to each snow-fighting unit. Our list is as follows: Two scoop shovels, two sharp picks, three brooms of steel wire, equipped with spears, one crowbar, one large drawbar, four large draw pins, a minimum of 600 lb. of salt, two pails, two car replacers, two white lanterns, one barrel of sand, two red lanterns, two switchbars, six oak blocks 2 in. x 6 in. x 24 in. in size, six oak blocks 4 in. x 6 in. x 24 in. in size, two oak wedge blocks faced with steel 4 in. wide and 24 in. long, and four 9-in. fish-plates.

In addition to devices for removing snow from the tracks the Connecticut Company appreciates the importance of utilizing mechanical means in unloading it from work trains. All that can be reported at this time

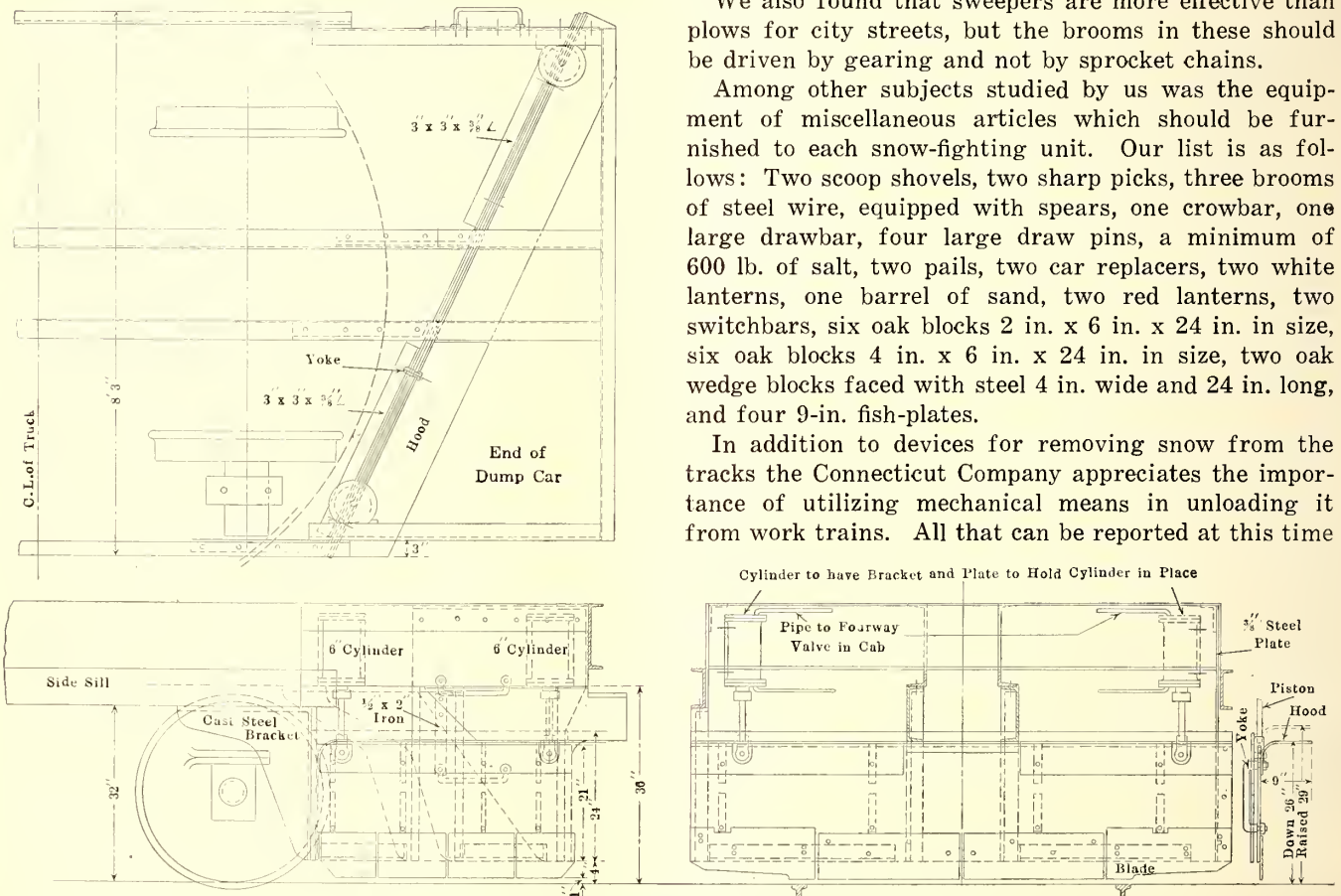


FIG. 3—SNOW FLANGES AS MOUNTED UNDER MULTIPLE-DUMP CAR

part carrying the plow point, guides being provided as indicated in the plan view. The movable part is raised and lowered by means of one air cylinder, the motion of the piston of which is transmitted through bell cranks, a rod and a short chain.

The above devices are suitable for heavy special service cars which are not used to a great extent in winter. For use on trolley express cars a special type of scraper, an adaptation of designs which have already proved satisfactory, is to be recommended. Heavily loaded double-truck express cars can start with a storm and thus very materially assist the operating department in keeping the tracks clear.

In preparation for winter all snow-fighting equipment should be in first-class condition by Nov. 15 of each year. Shearing plates should be sharpened and on some

is progress, as it is planned to try out a number of methods this winter with the hope that something practical will materialize.

We were impressed firmly with the fact that snow fighting machines of all kinds—in fact, any device which will replace labor—are valuable assets in these days of labor shortage. Snow-fighting units are always ready and can be depended upon to do certain work, while human labor is uncertain and especially so under storm conditions.

ORGANIZATION OF THE SNOW-FIGHTING FORCE

The difficulty in regard to snow fighting is its uncertainty. The man responsible for this work cannot know the quantity or the character of the material which he may be called upon to move. By way of con-

trast, if an engineer is given two days to haul 15,000 cu. yd. of sand from Brown Street to Smith Street yard, a distance of 5280 ft., he knows all of the conditions involved in the job and can plan accordingly. When he has to move snow he knows practically nothing about the conditions except that he is going to be tremendously handicapped by the weather. The all-important

the equipment available, but always with a view to cutting hand labor down to a minimum.

DUMPING SNOW INTO SEWERS

The use of sewers as a means for snow removal has received particular attention from the Connecticut Company and the city of New Haven has given permission for such use in a considerable number of cases. In order that there may be no misunderstanding as to the manholes which can be used, charts like that of which a portion is reproduced in Fig. 5 are furnished to those engaged in snow fighting.

We have found that by the use of a two-horse snow remover of the scraper type we can, with an average haul of 700 ft., remove snow from the street and dump it into the city sewers at a cost of 13 cents per cubic yard. This rate is less than one-half that of carrying the snow by team, and the work can be done by a gang or four or five men in addition to the driver.

The dumping of snow into the city sewer requires, of course, the co-operation of city engineers, and in many cities their consent has been withheld due either to precedents or to some unusual condition which confronts them. The city of New York has gone so thoroughly into the matter and has issued so complete a report on the subject that with this backing the Connecticut Company has received permission to use the plan in several municipalities. In our opinion the use of the sewers where possible is the most satisfactory of all plans for snow removal and it reacts to the general good of the community served. Undoubtedly the method will grow in favor as soon as city engineers become more familiar with the excellence of the results obtained.

In our communities special snow-dumping manholes are being considered, and these are valuable because snow can be dumped into the sewers with their aid with a minimum amount of labor. One manhole of this type is being built into a large and important bridge under

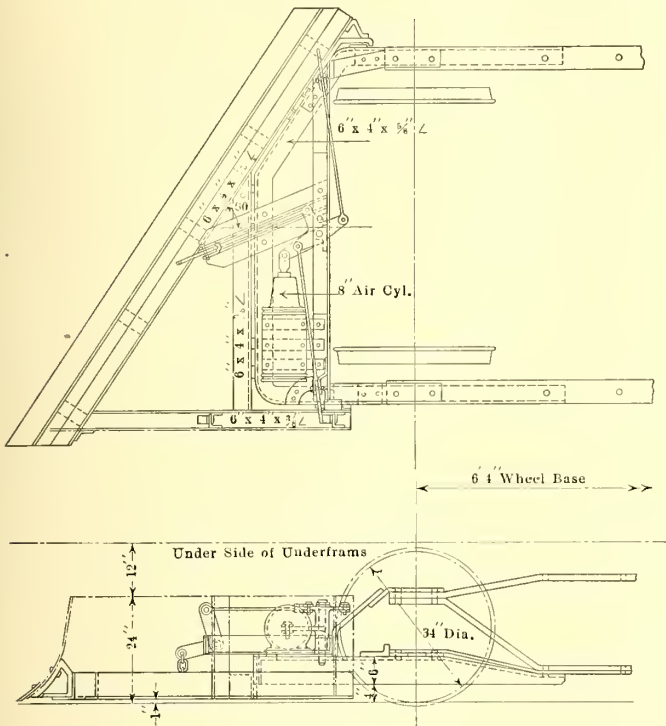


FIG. 4—SHEAR PLOW POINT MOUNTED UPON TRUCK FRAME

thing, therefore, is to have a sufficient reserve of men and equipment, and more especially equipment.

Not later than Nov. 15, when the regular routes for the plows and sweepers are drawn up, the chief motorman, a shop man and a regular motorman assigned to the equipment should test out each piece of equipment on the road, reporting in writing as to its condition and listing necessary repairs. These repairs should be made at once. The chief motorman should be held responsible for the condition of all snow-fighting equipment during the entire winter season.

An informal meeting should be held in the manager's office in the fall, when all concerned may offer suggestions as to improvements in the organization or equipment.

The maintenance-of-way department should be directly responsible for the salting of switches, cleaning intersections and disposing of accumulated snow, acting, of course, under orders from the manager's office. For salting switches at night a special car carrying five or six men has been found to be economical and efficient, as without this it is bound to be difficult to reach the switches on outlying lines under the severe weather conditions which are apt to prevail in the brief time available. Orders should be issued to men on plows to salt switches when they open up a line which the maintenance-of-way department has not been able to reach on account of the stalling of the regular cars. In fact, these men should salt all switches during a storm.

In every case the organization must be built around

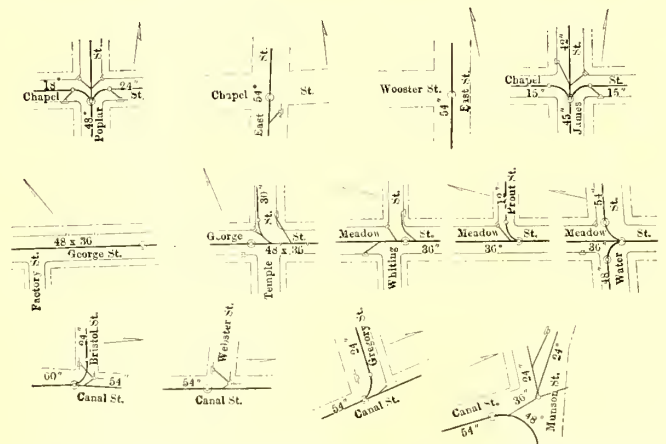


FIG. 5—SECTION OF CHART SHOWING SEWER MANHOLES

construction, and the city and the railway will have here an economical point for disposing of snow.

Before leaving the subject of dumping snow into sewers it should be noted that, aside from the economy mentioned, the difference between this method of disposal and that usually employed, namely, carting snow to city dumps or rivers, may in many cases be the difference between success and comparative failure.

In conclusion, I wish to emphasize the importance of

utilizing equipment to the maximum in disposing of snow. This means reducing man power to a minimum. The latter purpose is accomplished in many cases by the use of some type of scraper with a short haul to the point of disposal. On the other hand, it must be evident that if a miscellaneous service car, such as a trolley express car, can be made over in a few hours into a dependable snow-fighting unit, the general efficiency of the outfit has been increased. Most snow-fighting organizations are designed to meet and conquer the average snowfall, but it is the unusual which happens in so many cases. Then the ordinary organization is taxed beyond its limits and there must be a reserve in readiness to enter the fight. As machines are more dependable than men under storm conditions, machines must form the backbone of the reserve force.

Rubber Gloves Apparently Not Injured by Severe Testing

BY C. G. BROWN

Laboratory Director Rochester Railway & Light Company, Rochester, N. Y.

It is not at all uncommon for operating companies to subject rubber gloves to a high-voltage test before accepting them. Sometimes all the gloves are tested, and in other cases only a certain percentage are selected for tests. The Rochester Railway & Light Company, however, is testing all new gloves before they are put into service, and occasional tests are made on the gloves already in use. Another way in which our test differs from the customary method is that we not only apply high voltage—in our case, 10,000 volts—but we also have an ammeter in series with the gloves, so that we know how many milli-amperes are being passed through the glove. As a tentative limit we are taking 10 milli-amperes. If more current than this passes the glove is considered unsatisfactory.

One objection which has sometimes been raised to this test is that the glove might be weakened by it, especially if the testing were done frequently. In order to find whether there was any ground for this objection we subjected an ordinary glove, which had had considerable use, to 10,000 volts for twenty-six hours before it broke down. When it did break down it was at the surface of the water, and an effect was noticed just before the breakdown which appeared to have been caused by corona. It seemed probable that a brush discharge was given off from this one point of the inside of the glove, and that the gradual weakening effect of the brush discharge rather than the high tension on the glove proper, caused the breakdown. The glove was then returned to the water without being immersed quite so far, and was subjected to a similar test for 118 hours before the second breakdown. The second breakdown started a fire in the upper part of the rubber, so that we were not able to examine it to see whether or not there were any small cracks in the glove. One should remember that the part of the glove which is above the water in this test is not the part which needs careful testing, and that no special damage is done if this part is weakened. Further, since the testing is not likely to last more than a minute or a minute and one-half, once a month, the experiment indicates, although it does not prove, that such testing is harmless.

Three-Section Concrete Poles Made to Resemble Steel Poles

Cylindrical Poles Constructed at \$18 Each Are Cheaper and More Satisfactory than the Square Concrete Poles

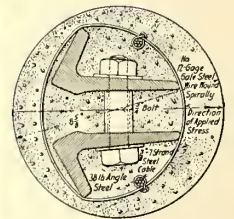
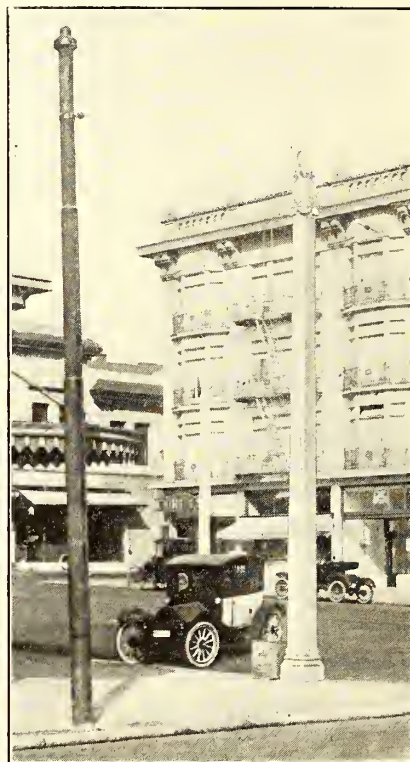
BY S. L. FOSTER

Chief Electrician United Railroads of San Francisco

For the past year the United Railroads of San Francisco has been manufacturing a tapered cylindrical reinforced 30-ft. concrete pole for double side-pole trolley lines. The metal elements of the pole are made of scrap 38-lb. angle steel which was torn out when the old cable roads were reconstructed as electric lines. This angle shape is used only for cable lines which are no longer being built, and the price offered for this unusual shape of steel angle as scrap has hitherto been ridiculou-

sly low. The concrete pole costs about \$18 as compared with \$44, which is the present price of the 5-in., 6-in., 7-in. steel pole.

By using two of these angles back to back as the tension member and assuming the concrete as the compression member, a pole has been constructed which



AT LEFT, THREE-SECTION CYLINDRICAL CONCRETE POLE SIMILAR IN APPEARANCE TO A TUBULAR STEEL POLE. AT RIGHT, SQUARE CONCRETE POLE. DRAWING SHOWS CROSS-SECTION OF CYLINDRICAL CONCRETE POLE

appears by calculation to have a slightly higher moment of inertia than a three-section tubular pole made of 5-in., 6-in. and 7-in. standard pipe. Under test this concrete pole showed a smaller permanent set after the application of a 1000-lb. force at the top than the standard tubular pole did under a pull of 800 lb. The reinforced concrete pole gave a greater deflection per pound of pull than the tubular pole, but in service the concrete pole has proved equally satisfactory for the span wire strain. It looks as well as the steel pole, and except for esthetic reasons it requires no preliminary or periodic scraping, painting or other preservative treatment such as the steel pole requires in San Francisco's marine climate. The concrete pole weighs 2100 lb. as against 675 lb. for the 5-in., 6-in., 7-in. tubular pole, but the former will last forever whereas the latter, unless given expensive paint treatment yearly, rapidly suc-

cumbs to the corrosive action of the salt fog. This corrosion occurs not at the base alone where most steel poles fail, but in the upper parts of the pole and more particularly on the windward or seaward side.

Of course, the concrete pole is strongest in but one direction while the tubular pole is equally strong in all directions, but by setting and using the former for span strains only it is found entirely adequate.

In constructing these cylindrical section concrete poles, vertical wood forms are necessary and forms that will remain watertight under considerable hydrostatic pressure. The pole is built upside down, using very fluid concrete. The proportions used in the smallest diameter section is 1 cement, 2 sand, 3 fine gravel; that in the larger diameters 1 cement, 1 sand, 2 gravel. The completed pole is allowed to stand four days in the forms for the concrete to set. It is then lowered to the ground, its voids filled and its surface smoothed up. After this it is covered with sand and left to season thirty days. To provide a metal mesh to retain the concrete about the angles, the latter are wrapped spirally with a galvanized steel No. 12 B. W. G. wire, each turn being wired on each side of the angles to a longitudinal piece of $\frac{3}{8}$ -in. seven-strand steel cable whose bight at one end of the pole serves as a point of attachment for the ropes used in lowering and for a small sheet brass dating tag.

The cross-section shown is of the lowest section of the pole through one of the spacer bolts. The two angles are carried up to the top of the pole, being back to back without any spacing between them at the top of the pole. The pole top is molded in the forms to a hemispherical shape so as to accommodate the standard cast-iron cap and carry out the resemblance to the standard tubular pole. With its maximum diameter of but $8\frac{5}{8}$ in. its appearance is less obtrusive than the usual square section concrete pole with twisted steel rod reinforcing. For the same safe pull at the top the square pole is 13 in. or 14 in. square at the ground line, $18\frac{1}{2}$ in. or $19\frac{1}{2}$ in. across the diagonal, and far heavier than the pole just described. It is also more costly to construct and more expensive to erect. The photograph includes a round three-section concrete pole that took but $\frac{1}{16}$ in. permanent set when released after the application of 1000-lb. pull at the top and a square, rod-reinforced concrete pole calculated to withstand safely a pull of 800 lb.

The cylindrical poles are made to resemble the standard 6-in., 7-in., 8-in. tubular steel poles. The concrete pole sections are $6\frac{5}{8}$ in., $7\frac{5}{8}$ in. and $8\frac{5}{8}$ in. in outside diameters and are of the same relative lengths as the tubular poles. This permits the application of the standard pole bands and cast-iron feeder cross-arms that are used on tubular poles. In appearance only an expert can distinguish the concrete from the tubular pole.

The concrete pole if painted must be given as a first coat some specially made lime-resisting application. Even this should not be applied until the pole has had ample time to dry out. As the assortment of colors in the lime-resisting paints is usually limited and seldom matches the color that is standard for the steel poles on the system, the second and the third coats can be made of the standard linseed oil paint. If the standard linseed oil paint is applied as the first coat, the oil will combine with the caustic lime set free from the con-

crete and will be transformed into a soap. The result will be that the film of paint will quickly disintegrate, check, powder and peel. It will be washed off by the first rains and the work will have to be done all over.

Pointers on Saving Coal in the Power Plant

Experts on Coal Conservation Offer Suggestions to Owners and Managers

The committee on coal conservation of the Chamber of Commerce of the United States has issued a bulletin containing a number of definite suggestions. It directs attention to the fact that a horsepower-hour of energy has been produced on a pound of coal. In most plants three or four times this quantity is consumed, and it is not to be expected that such a result can be attained throughout the country, but it is the record of present possibility.

The definite suggestions are as follows:

Reconsider the advantage of buying heat and power from a specialized plant that makes nothing else and can afford the investment and supervision that gets a maximum of value out of each pound of coal; in some localities hydroelectric power may be available.

Find the nearest source of coal that will meet the requirements, even if it does take a little more trouble to use it; the tax on the transportation system will thus be reduced so far as haulage by rail is shortened; coal is mined in twenty-six states, and these states extend practically across the continent and from the northern to the southern borders.

Give to the power plant and its personnel recognition and encouragement such as is due an expert and an important department, thus getting new effort and attention to offset the extra attention and care needed with coal inferior in grade and preparation to the coal formerly available.

Seek to increase skill and proficiency in the men who handle the coal; a fireman at a hand-fired boiler shovels three to ten tons of coal a day—or as great a value in material as many skilled men in other departments.

Put the fuel-using equipment into as perfect condition as possible; provide at hand-fired plants an ample firing floor with a good surface, together with a smooth-bottomed coal car if it can be used; eliminate leaks in the boiler setting, see that fire doors fit properly, replace defective grate bars, make sure that smoke connections are clean and tight; if mechanical stokers are used, see that they are in good repair and that directions for using them are being followed; in general, make the plant and fireroom of such character that an efficient man will stay on the job.

Install simple and convenient means by which the fireroom force may see results; scales for weighing fuel and ash, meters for measuring water fed to the boiler, and devices for determining the quality of flue gases, the draft over the fire, etc., can be made to interest the men in the fireroom and show the actual results of efforts to economize; convenient means for operating the flue damper must be installed.

Endeavor to run boilers in service at their capacity; if efficiency is increased, one or more boilers in a battery may be dropped.

Provide water that is free from scale by using, when necessary, water-treating devices if the plant is large and special feed-water heaters in small plants.

Reduce loss of heat after it is generated; see that boiler surfaces and steam pipes are properly covered; the simplest and most inexpensive covering will reduce loss by 80 per cent; in the engine room cut out useless steam lines, have valves properly set, reduce the small auxiliary pumps, etc., to a minimum, provide the repairs for which the engineer has been asking.

Obtain expert advice; good steam engineers are familiar with well-tried ways of reducing both consumption of coal and consumption of heat; their advice should be obtained in all practical cases; this is not a time for radical innovations but for utilizing tried experience.

Coal Gas for Driving Motor Vehicles

The executive committee of the British Commercial Gas Association has issued a comprehensive report on the use of coal gas in motor vehicles. The report states that the principal objection to its use is the difficulty of storage. The practical disadvantages of storing the gas under normal pressure in a flexible container are the fragility of the container and its large size which make it unsuited for city service. However, the arrangement is simple and economical and the limitation of the amount of gas that can be carried is partly offset by the ease with which the holder can be re-filled.



GAS-DRIVEN OMNIBUS IN EDINBURGH

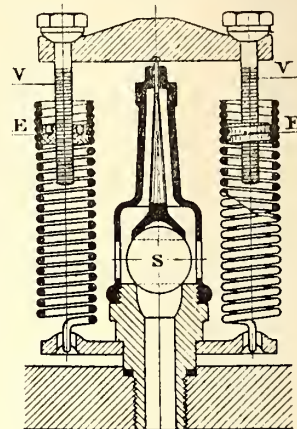
For storing the gas under pressure in steel cylinders a pressure of from 20 to 25 atmospheres is recommended. It was found from experiments that the calorific value of the gas is reduced 10 per cent if the pressure is carried to 120 atmospheres. The effect of low-pressure storage on the quality of the gas was not determined, but it is believed that at 20 atmospheres the effect would be negligible. It is recommended that the charging depots be of the multiple type rather than single reservoir and that the gas should be stored at a higher pressure than that required on the cars to compensate for the drop in pressure in transferring. No trouble has been experienced in the drop in temperature due to the expansion of the gas when it is released from the station storage cylinder.

Test runs made by a bus under average conditions at a schedule speed of 9 m.p.h. showed that a distance of 25 miles can be covered per 1000 cu. ft. of gas. An important feature in the use of coal gas is its cleanliness, which makes for clean pistons and cylinders, and eliminates injector troubles and starting difficulties in cold weather. A view of an omnibus of the Scottish Motor Traction Company operating in Edinburgh is reproduced to show the arrangement of the gas holders.

Reducing the Time Element in Hardness Tests

French Engineer Improves Brinell Apparatus Permitting Tests to Be Made in Ten Seconds

In the issue of the ELECTRIC RAILWAY JOURNAL for June 26, 1915, page 1201, W. L. Allen described methods of testing gears for hardness, etc. He explained the principle of the Brinell machine for testing hardness, and a reproduction of a photograph of the machine was used by way of illustration. The issue of *Le Génie Civil* for Oct. 20, 1917, page 265, contains a report of an important improvement in the Brinell apparatus which has successfully reduced the length of time required to make an accurate test with that machine from five minutes to ten seconds. It is not to be inferred that in practical work it has been possible to allow as long as five minutes for each test, hence the results secured in practice have probably less accuracy, say by 5 to 10 per cent, than when made in the laboratory.



VALVE FOR LIMITING FORCE APPLIED IN BRINELL MACHINE

It will be remembered that the Brinell machine operates on the principle that if a hard steel ball of specified diameter is pressed into a metal surface with a definite force, the diameter of the depression is a measure of the hardness. The ball used in the actual apparatus has a diameter of 1 cm. (0.394 in.) and the force used is 3000 kg. (6615 lb.). The Brinell "hardness numeral" is obtained by dividing the force in kilograms by the square of the diameter of the depression in millimeters. This numeral may vary over a wide range, being about 150 for a glass-hard steel and 600 for a soft steel.

The improvement referred to consists in applying the principle that if a certain extra force be applied this can be made to compensate for the reduction in diameter of the depression due to the use of too short a test period. Experience has shown that the additional force can be determined from the following formula, wherein dP is the extra force, dD is the error in diameter due to shortage of test period, and D is the diameter of the depression. All of these units are in the metric system.

$$dP/3000 = 2dD/D$$

In order to apply the principle to the Brinell machine, in which the force is applied by a hydraulic piston, a valve like that shown in the accompanying cross-section is used to limit the hydraulic pressure. In this a ball valve rests on a seat sharply inclined, and the ball is held on the seat by means of springs which are adjustable as to length and stiffness by means of the adjusting nuts EE and VV respectively. When the valve is properly adjusted it serves to make the desired correction, practically independent of the speed with which the force is applied. While theoretically each material requires a different adjustment, in practice it is found that one setting will serve for most practical purposes.

Cost Data on Special Work Renewals—VII

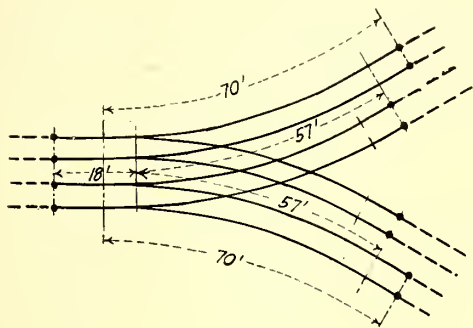
By M. BERNARD

Assistant Engineer Way & Structures Department,
Brooklyn (N. Y.) Rapid Transit System

This is the seventh plate of the series of Cost Data on Special Work Renewals. The previous plates were published in the issues for July 21, Aug. 18, Sept. 8, Sept. 29, Oct. 27, and Nov. 10.

Fig. 24—Double Track Wye

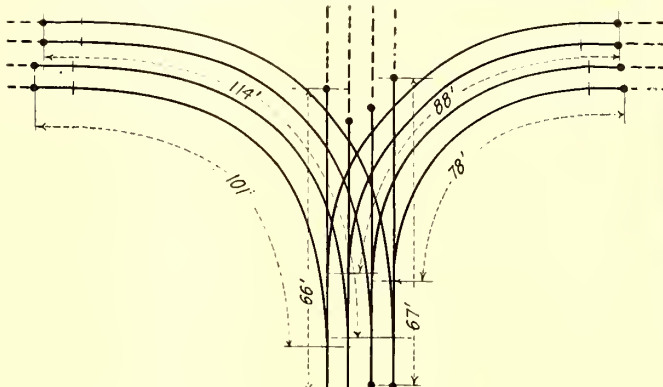
Length—290 ft. single track
Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.



	Light Traffic	Average Traffic	Heavy Traffic
Labor	\$585.00	\$735.00	\$885.00
Handling	200.00	215.00	230.00
Miscellaneous	105.00	130.00	155.00
Total (except materials) .	\$890.00	\$1,080.00	\$1,270.00
Cost per single track foot..	3.07	3.72	4.38

Fig. 25—Double Track Through Wye

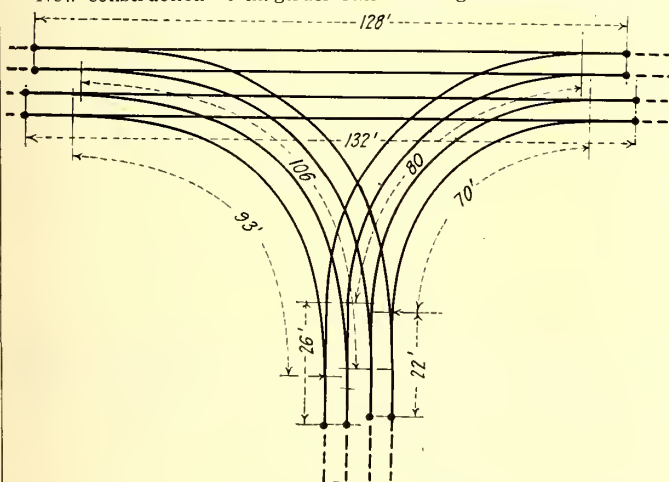
Length—514 ft. single track
Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.



	Light Traffic	Average Traffic	Heavy Traffic
Labor	\$1,060.00	\$1,325.00	\$1,590.00
Handling	360.00	390.00	420.00
Miscellaneous	200.00	245.00	290.00
Total (except materials) .	\$1,620.00	\$1,960.00	\$2,300.00
Cost per single track foot	3.15	3.81	4.47

Fig. 26—Double Track Three Part Wye

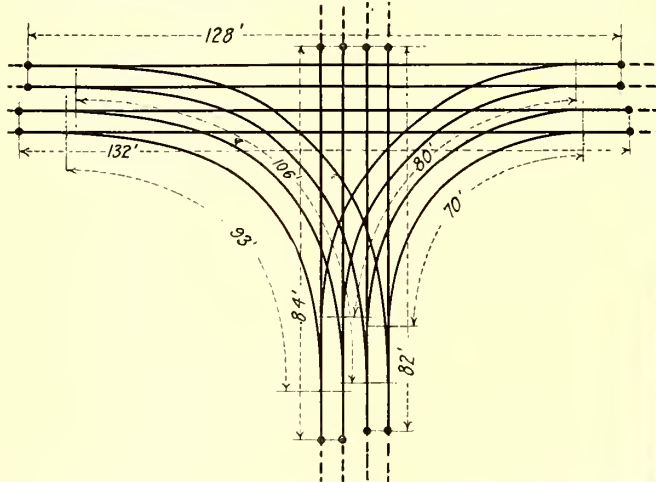
Length—657 ft. single track
Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.



	Light Traffic	Average Traffic	Heavy Traffic
Labor	\$1,230.00	\$1,530.00	\$1,840.00
Handling	460.00	500.00	540.00
Miscellaneous	230.00	280.00	340.00
Total (except materials) .	\$1,920.00	\$2,310.00	\$2,720.00
Cost per single track foot	2.92	3.51	4.14

Fig. 27—Double Track Three Part Through Wye

Length—775 ft. single track
Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.



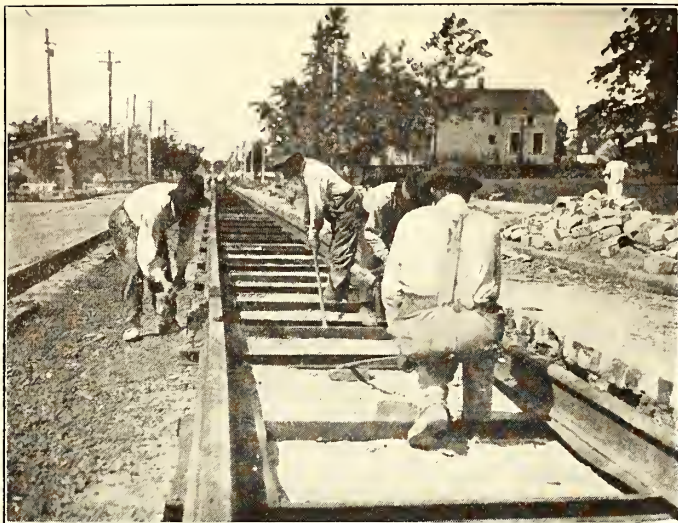
	Light Traffic	Average Traffic	Heavy Traffic
Labor	\$1,600.00	\$2,000.00	\$2,400.00
Handling	540.00	590.00	640.00
Miscellaneous	300.00	370.00	440.00
Total (except materials) .	\$2,440.00	\$2,960.00	\$3,480.00
Cost per single track foot	3.15	3.82	4.50

*Hard-center construction. *Explanation:* By "light traffic" is meant either the divergence of cars during progress of work or a traffic of not more than 150 cars per day of twenty-four hours. "Average traffic" denotes the passage of about 325 cars per day of twenty-four hours, and "heavy traffic" that of 750 or more.

By "labor" is meant the labor cost of tearing out the old paving and special work and installing the new at the location where the work is done. "Handling" signifies the cost of loading the necessary materials at the various storage yards as well as the unloading of same at the place of renewal. It also includes the cost of transportation and the cost of removal of old or left-over material. Since the transportation

is done by a subsidiary company, which adds profit and overhead expense to the net cost, this item may differ considerably from that obtained on other railways. Under "miscellaneous" are included the expense of city inspectors, expense incurred when portable crossovers are used for divergence of cars during renewal, watchmen's wages, and incidental engineering expense. The total of these three items—labor, handling and miscellaneous—therefore includes everything except the cost of materials.

On account of the unsettled labor conditions prevailing since the beginning of the war, the costs given are based on pre-war wages, the average track labor on which these costs are based is 20 cents per hour, including the foreman's wages.



DRIVING ONE SET OF CLIPS INTO POSITION WITH SLEDGES



PLACING THE OPPOSITE CLIPS IN THE STEEL TIES

Time Studies in Applying Twin Steel Tie Fastenings

In order to determine the speed with which rail clips can be applied to International steel twin ties, time checks have been made on several four-man gangs engaged in applying the fastenings. These gangs were composed of average foreign labor, and they were not aware that the speed of their work was being checked. The average of a large number of time checks showed that it required only two and one-half minutes for each gang to move forward and apply the eight fastenings to one tie. This is equivalent to gaging and spiking three wooden ties, the same number of men being required in each case.

The sequence of operations is shown in the accompanying illustrations. After completing the fastenings on one tie the gang, equipped with two 12-lb. sledges, moved forward to the next tie. The eight clips and four wedges were distributed in advance. Two clips for each rail were inserted in the openings in the tie plates, the ties being laid slightly off center to permit this. With the four clips in place the tie was struck horizontal blows with sledges until the four clips were driven tight up over the rail base. In this

position the other four clips were inserted in the openings in the tie plates. If they were tight they were started into position and struck a vertical blow with a sledge which forced them down. The final operation included driving a small chisel behind the clips last placed to force them against the rail base. When they were forced in position the chisel was removed and the wedges furnished with the ties were driven in place. No track gaging was necessary, as this was provided for in the tie punching and clips. These are manufactured with a maximum tolerance of 1/64 in., which is as close as track gaging is usually done.

There is now in service about 500 miles of track built with International steel twin ties.

At the carhouses and shops of the New York State Railways, Syracuse, N. Y., the employees that are required to operate cars are designated by the master mechanic. They receive a special training from the instruction department. After an employee receives this training his name is posted on a bulletin board in the carhouse or shop. No employee whose name does not appear on this list is required or permitted to operate a car for any reason whatsoever. A similar rule is in force on the Utica lines of this company.



FORCING THE CLIPS AGAINST THE RAIL WITH A SMALL WEDGE



STARTING THE LAST WEDGE BEHIND THE TIE CLIP

News of Electric Railways

Traffic and Transportation

Financial and Corporate

Personal Mention

Construction News

Help for Portland Company

Public Hearings to Be Held to Secure Suggestions to Assist Company to Obtain More Revenue

At a public hearing held before the City Council at Portland, Ore., on Nov. 14, on the petition of the Portland Railway, Light & Power Company to discontinue a number of stub-end lines throughout the city in order to reduce expenses, delegations from each of the districts affected appeared and protested against abandonment of the lines. The preliminary meeting for organization purposes was called by S. C. Bratton, president of the Portland Ad Club. He suggested that such public hearings would be the logical way by which the public could assist the company in securing sufficient revenues to meet its increased operating expenses.

HOW THE INVESTIGATION WILL PROCEED

The investigations will probably continue over a period of two or three weeks. Sub-committees were appointed to study information and data presented to the Public Service Commission; another will consult with the board of arbitration; another will confer with the executive committee of the men's union, and a fourth committee will deal with the officials of the company to ascertain the actual effect of the commission's decision and the arbitration award upon the operating expenses of the company. The remedies for securing relief by the company as suggested by the commission include relief from unjust burdens imposed by the public, increased business, greater operating efficiency, reduced service and increased rates.

The findings of the investigators will be submitted to the Public Service Commission, probably with a petition that the company receive financial relief before Jan. 1, when the present award of the board of arbitration may be annulled by the commission if it so desires.

F. I. Fuller, vice-president of the company, recently told the City Council that the plan of abandoning the various lines in question was recommended by the Public Service Commission in order to reduce operating expenses, and that the company was endeavoring to follow out these recommendations.

Cincinnati Rapid Transit Progress

At a meeting of the Rapid Transit Commission of Cincinnati, Ohio, on Nov. 2 Frank S. Krug, chief engineer, reported good progress on the engineering work for the loop. Preliminary drafts of specifications covering general features of construction have been commenced.

The Linwood Improvement Association has petitioned the City Council to change the name of the East End line to the Eastern Avenue-Linwood line and to establish an extension to California, Coney Island and Mount Washington over the tracks of the Interurban Railway & Terminal Company. This was referred to W. C. Culkins, street railway commissioner.

Residents of Pleasant Ridge and Kennedy Heights are urging Mr. Culkins to recommend an extension of the North Norwood line to these villages. The Cincinnati Traction Company insists that the Interurban Railway & Terminal Company's line should take care of this business.

Mr. Culkins has advised the City Council to defer all plans for rerouting cars until definite locations of stations of the proposed loop are fixed by the Rapid Transit Commission. At present these locations are only tentative. With a letter to this effect to Clerk Fred Schneller, Mr. Culkins returned ordinances referred to him by the City Council providing for double tracking Central Avenue and

changes in existing routes. He also advises Council that the Rapid Transit Commission will not decide upon the location of stations definitely until the Ohio Supreme Court has passed finally upon the validity of the rapid transit act in the suit now pending before the court.

St. Louis Hearings Disorderly

Chairman of Committee of Aldermen Inclined to Regard Further Public Discussion of New Franchise as Futile

The public hearings before the public utilities committee of the Board of Aldermen of St. Louis, Mo., on the proposed settlement ordinance for the United Railways have become more or less turbulent. There has been constant bickering between the different interests, and at times the spectacle has been presented of a battle royal rather than orderly consideration of the matters affecting the welfare of every man, woman and child in the city.

PUBLIC HEARINGS A "NECESSARY NUISANCE"

On Nov. 6 D. L. Schwartz, chairman of the committee, declared that the public hearings had become a "necessary nuisance." He said that many persons attempted to talk who admitted that they had not read the ordinance, although the committee had sent copies of the ordinance to persons interested. He deplored the existence of conditions which made possible expressions of personal opinion rather than constructive criticism. According to Mr. Schwartz the committee felt that the ordinance was either good or bad. It was his opinion that it was futile to delay settlement weeks and months in public hearings.

On Nov. 13 another hearing was held by the committee. It lasted more than four hours. There was almost continued disorder. Thomas M. Pierce, special counsel for the United Railways, described the speakers for the Central Trades and Labor Union as agitators and exponents of hoodlumism. At this hearing Lee Meriwether, once candidate for Mayor, was the principal speaker against the bill. He said that he had read the company's advertisements with wonder and amazement.

Later dissension in the ranks of the Civic League was disclosed. Emil N. Tolkaez resigned as president of the league after a stormy meeting of that body at which he expressed his displeasure at the league taking a stand which might delay or hinder a settlement of the mill tax and franchise problems of the railway.

PRESIDENT McCULLOCH REVIEWS MATTERS

In the *United Railways Bulletin* for November, Richard McCulloch, president of the United Railways, discussed the negotiations with the city. He said that the company earnestly and sincerely desired a settlement which would allow its finances to be straightened out and place it in a position where it could borrow money for equipment and extensions and enable it to continue the best of service and relieve it from the undesirable attitude of being at war with the city. According to Mr. McCulloch the only material advantage to the company in the proposed ordinance was a reduction of \$120,000 annually in the so-called mill tax. The company had disbursed more than this sum of money in the increase in wages made to the trainmen on Nov. 1. Although war conditions and the tremendous increase in the cost of supplies had made the company's position more difficult than ever before, the officers were glad to make the increase in wages as an expression of their appreciation of the loyalty and skill of the men.

Akron Strike Settled

Men on Lines of Northern Ohio Traction & Light Company Will Receive Five Cents More an Hour

A settlement between the Northern Ohio Traction & Light Company, Akron, Ohio, and its 800 striking motormen and conductors was effected on the evening of Nov. 16, and full operation on the interurban line and the Akron city line was resumed at 3 o'clock the following morning.

The men will receive an increase of 5 cents an hour for the period between Nov. 1 and May 1, 1918. Negotiations may be opened at the expiration of this contract for a new wage scale, but in case of a disagreement between the company and the men the adjustment of the scale must be left to arbitration. This is a new feature introduced in the last proposition made by the company.

An increase of 5 cents an hour from Nov. 1 to May 1, 1919, was offered by the company the day before the settlement. This proposal was rejected. The company felt that it should protect itself against excessive demands in case of a shorter period by the use of the arbitration clause, and the executive committee recommended the acceptance of the proposition in that shape.

Under the terms of the agreement the men on the Akron city lines will receive 33 cents an hour for the first year, 35 cents for the second year and 38 cents thereafter. Men on the interurban line will receive 2 cents an hour more than this rate.

The demand of the men was for a straight advance of 10 cents an hour.

Informal Wage Conference at Boston

At the request of the local branch of the Amalgamated Association, W. D. Mahon, president of the national body, will shortly visit Boston, Mass., for an informal discussion of the wages situation on the Boston Elevated Railway as affected by present war prices. The company and its union employees are now working under an agreement which does not expire for about a year and a half. While a number of conferences have been held between the officials of the local union and M. C. Brush, president of the company, relative to wage conditions, it is understood that no disposition to depart from the agreement has been evidenced. At some of the later conferences the possibility of the men's increasing their daily pay by working longer hours was discussed, but it is understood that the union did not look favorably upon changing the present nine-hours-in-eleven basis of working. The company is in no position to increase wages at this time. Only recently it passed its quarterly dividend. Pending the report of the special street railway investigating commission in Massachusetts to the forthcoming Legislature and subsequent favorable action by the latter, little chance of early relief appears for the company. The present wage agreement expires in May, 1919.

Go as a Mechanic!

Skilled Men Wanted for Service Overseas Behind the Lines

Electric railway repair men and machinists are wanted for early service overseas. The men in the front line trench need the help and co-operation of skilled men back of the lines, and men who can take care of and repair transportation machinery are wanted at once for the Enlisted Ordnance Corps, National Army.

Uncle Sam is calling on the electric railways to come across and help his fighting men. There is a lot of work to be done "over there," and the call has gone out for all men of this kind between the ages of eighteen and forty who want to do their bit and who know their job.

Modern war is a tremendous business, and the army that wins is the army which has the best equipment and the best men. The men "over there" now are ready to go ahead, but they still need experts to repair and maintain their equipment. There is a fine chance for every man who wants to help. Write to the Chief of Ordnance, War Department, Washington, D. C.

Cleveland Wage Offer Rejected

Representatives of the conductors and motormen of the Cleveland (Ohio) Railway at a conference on Nov. 17 rejected an offer of an increase of 5 cents an hour covering a period from Nov. 1 to May 1, 1919. Time and a half for overtime was included in the offer, but this was to be estimated above schedule runs and was not to apply to runs shorter than eight hours.

The men objected to entering into a contract that would continue longer than May 1, 1918. They were satisfied with the amount of the increase. They argued that they could not tell what the cost of living would be the coming year and felt they would not be justified in making a contract that could not be modified before 1919.

About \$375,000 annually would be added to the payroll by the increase offered by the company. This would almost certainly cause an increase in the rate of fare at once.

Another Minneapolis Valuation

Another official report has been filed of the valuation of the property of the Minneapolis (Minn.) Street Railway, controlled by the Twin City Rapid Transit Company. This last estimate is by James D. Hogarth of the city attorney's office at Milwaukee, who was employed by Mayor Thomas Van Lear. The new valuation is less than that made by the city engineer, although based upon the Cappelen analysis and coinciding in the real estate figures. Some of the comparisons are as follows:

	Hogarth	Cappelen
Total valuation	\$13,608,730	\$16,205,638
Real estate	1,088,862	1,088,862
Tracks	2,232,337	2,743,564
Bridges	112,256	126,427
Rolling stock	4,066,950	4,649,318

Difference between the two reports was much in the way of estimating depreciation. In reference to one line of road the city engineer estimated the cost to reproduce at \$89,629, figured the depreciation at \$1,141 and left the true valuation at \$88,475. Mr. Hogarth contended that if labor depreciation was allowed also the section would be valued at \$70,555. Mr. Hogarth said new cars could be reproduced at \$6,000 or less, and he made a 10 per cent depreciation deduction and a further deduction of \$400 a car for pay-as-you-enter equipment, which he said are necessary to permit economical operation.

Wage Increase Desired

Des Moines Men Say They Will Help to Boost Fares if That Should Be Necessary

Employees of the Des Moines (Iowa) City Railway and the Inter Urban Railway are about to make formal request of the company for an increase in wages of 3 or 4 cents an hour. The present contract between the men and the company does not expire for some time. Two months ago the company voluntarily granted an increase, but officials of the union say that it is not sufficient to meet the increased living expenses.

While the application has not been formally presented the City Railway is already considering the matter and has gone so far as to inquire of the City Council as to the possibility of making a straight 5-cent rate instead of six tickets for a quarter. Emil G. Schmidt, president of the company, in his preliminary negotiations with the men has advised that a fare increase is necessary in order to meet the wage increase asked by the employees. The corporation counsel of the city has, however, already ruled that the fare cannot be increased to straight 5 cents without bringing the question to a vote of the people, as he holds that the franchise specifically provides for a six-for-a-quarter rate. It is estimated that the straight 5 cent fare would increase the company's gross revenues \$75,000 a year.

Officials of the union suggest that the city investigate the books of the company to determine whether or not a fare increase is necessary in order to meet the wage raise. If such an investigation proves the company is right, the men say they will make an active fight for an increased fare.

B. R. T. Wants Rehearing on Car Purchase

The Brooklyn Rapid Transit Company on Nov. 22 filed with the Public Service Commission for the First District of New York an application for a rehearing in connection with the commission's order of March 12 last requiring the surface railroads of Brooklyn to provide 250 additional cars. In its order of last March the commission said that the interests of the company were fully protected by the right to a rehearing if facts should arise in the future rendering compliance with the order unreasonable or unjust. The present request of the company is based upon the changed conditions since the original order was issued. Bids received by the company from car builders indicate that at this time the cost of the cars would range from \$12,600 to \$16,600 each as compared with the normal cost of \$7,000 each. Denial of the appeal of the company from the original order of the commission is now before the courts.

Franchise Proposed for Waterloo

Provides for Numerous Improvements and Sharing of City in Profits—Reduced Fares to Workmen and School Children a Factor

A new franchise is proposed for the Waterloo, Cedar Falls & Northern Railway in Waterloo, Iowa. The grant contains some unusual features. It has been drawn and is awaiting a special election on Dec. 5, to place it in operation. A franchise drawn some months ago failed of passage in the spring election by a small majority. The new franchise provides for reduced fares during certain hours of the day, a continuous passage over the lines for 5 cents, reduced fares for school children and for the sharing by the city in the profits. The reduced rate of fare is proposed to be in force between 6 to 8 a. m., and 5 to 7 p. m., when tickets in books selling at twenty-five for \$1 will be accepted. The fare for school children is to be at the rate of twenty tickets for 50 cents. These tickets are to be sold in book form and the City Council will regulate the hours in which they may be used on actual school days.

HOW THE PROFITS WILL BE DIVIDED

A provision for the division of profit is quoted from the ordinance as follows:

"Whenever the street car earnings of the company return a gross income for their whole line of 5 cents per car-mile in excess of cost of operation, thereafter the company shall share with the city on all gross revenues derived in excess of said excess of 5 cents per car-mile. Such provision shall be upon the basis of 90 per cent to the company and 10 per cent to the city."

Any proceeds due the city are to be paid at the end of each quarter and the company is charged with the duty of keeping its books in such order that an audit by the city at any time will reveal the actual earnings of the company.

Certain specified extensions must be completed as soon after the passage of the ordinance as business conditions become normal, but in any event the extensions must be made within thirty months after the acceptance of the ordinance.

SPECIFYING IMPROVEMENTS

Ten years after the passage and acceptance of the ordinance, the City Council has the right to order a change in the system of power transmission from the present overhead wiring to an underground system, "or other approved system which may be in vogue at that time." The City Council must give the company one year's notice of such a contemplated order and the system to be installed must have been successfully operated in at least ten American cities of equivalent population, and with climatic conditions similar to those at Waterloo. After such an order has been issued, the company is to have two years in which to remove poles and overhead wires in the business district and four years for similar work in the residential district. By the end of three years after the close of the present war, the present wooden poles are to be replaced by concrete or

steel poles if the system of overhead power transmission now in use is continued.

RATE INCREASE SAFEGUARDED

The rate of fare cannot be changed except through the agency of a board of arbitration, the members of which are to be appointed by the judges of the district court. This arrangement has been provided in order to safeguard the public and make it practically impossible to change the rate of fare unless this is absolutely necessary. The method of procedure under which the board will act provides a time limit for every stage of the proceedings. In this way there can be no dilatory court proceedings. Should the decision of the board of arbitration meet with the disapproval of the citizens or the company, simple steps for an appeal are arranged.

Subway Commission Appointed

Mayor Harry L. Davis, exercising the right which he received at the recent election at Cleveland, Ohio, has appointed a board of subway commissioners, consisting of C. J. Neal, city director of finance, one year; Fielder Sanders, street railway commissioner, two years; M. A. Bradley, financier, three years; C. E. Adams, president of the Cleveland Hardware Company, four years, and C. A. Otis, investment broker, five years.

This board may make preliminary surveys, adopt plans which must be submitted to a vote of the electors, award contracts subject to the approval of Council and construct subways and underground terminals. After such construction is completed, the commission will have supervision over the property.

Mr. Sanders has already had a preliminary survey made. This will be placed before the commission.

Wage Increase in San Francisco

United Railroads Announces Increase in the Wages of Its Platform Men as Recognition of Service in Recent Strike

An increase in the wages of the platform men of the United Railroads, San Francisco, Cal., was announced on Nov. 12. With the announcement came the statement that this was a reward to the men for their loyalty in remaining with the company during the recent strike. In commenting on the increase, Jesse W. Lilienthal, president of the company, said:

"The company appreciates the faithful service of the platform men who remained continuously in its employ after Aug. 11, 1917, and recognizes that their loyalty and courage should be rewarded in a substantial manner."

The increase became effective at once. It amounts to about 3 cents an hour. The new scale is as follows:

Period	Rate Per Hour
First year of service:	
First six months.....	30 cents
Second six months.....	32 cents
Second year of service:	
First six months.....	33 cents
Second six months.....	34 cents
Third year.....	35 cents
Fourth year.....	36 cents
Fifth year.....	37 cents
Sixth year.....	38 cents
Seventh year.....	39 cents
Eighth and later years.....	40 cents
In addition men hereby promoted to the 40-cent class, and men hereafter reaching said class, after one year therein will receive for the next succeeding year.....	41 cents
And for the second succeeding year.....	42 cents

In addition to these new rates, and in order to favor the men who were loyal during the strike, it was announced that platform men employed between Aug. 11 and Sept. 17 are to receive 33 cents an hour. New platform men employed from Sept. 18 to Oct. 17 will receive 32 cents an hour. Platform men who left the service on Aug. 11, 1917, or later and who have been re-employed will receive the rate paid to them on Aug. 11, 1917, plus 2 cents an hour to those re-employed on or before Sept. 17, and 1 cent an hour to those re-employed after said date on or before Oct. 17. Platform men formerly employed and hereafter re-employed will receive only such rating and pay as may be individually assigned to them at the time of re-employment.

Seattle Wage Award Accepted

It Has Been Suggested that All Union Labor Back the Effort of the Company to Secure Fare Increases

The members of the union of trainmen of the Puget Sound Traction, Light & Power Company at Seattle, Wash., at a recent meeting unanimously adopted a resolution drawn up by S. J. Wallace, their president, accepting the findings of the arbitration board appointed to pass upon the questions of wages and terms of service and thanking the members of the board.

Suggestions have been made by the union that all organized labor be asked to back the company in an endeavor to secure 6-cent fares and the abolition of transfers. The increase in revenue thus brought about, it is said, would practically permit the granting of an eight-hour day to the men. Other means of relief suggested are the remission of the 2 per cent tax upon gross receipts, the abolition of bridge tolls and the repeal of the franchise clauses requiring the company to pay construction and maintenance cost of paving between its tracks.

The findings of the board of arbitration were reviewed in the *ELECTRIC RAILWAY JOURNAL* of Nov. 11, page 914.

Increase in Wages on Pennsylvania Line.—The employees of the Lewisburg, Milton & Watsonstown Passenger Railway, Milton, Pa., have been granted a 10 per cent raise in wages, effective from Oct. 11. It is the second 10 per cent increase since June.

Burlington Strike Settled.—The strike of conductors and motormen of the Burlington County Transit Company, Burlington, N. J., was settled on Nov. 14 under an agreement from the company to make the wage 28 cents an hour. The men were receiving 25 cents, and asked for 30 cents. They went out on Nov. 13.

Accident Ties Up Municipal Railway.—The city of Nelson, B. C., has purchased a motor generator from the city of Winnipeg, following the burning out of the generator in the city power plant. The accident put the municipal railway at Nelson out of commission. It is expected that it will be twenty days before cars will again be in operation.

Wage Increase in Fort Smith.—A contract calling for a wage increase of 4 cents an hour for the men of the Fort Smith Light & Traction Company, Fort Smith, Ark., has been signed by the company and a committee representing the Amalgamated Association. The contract replaces one that expired on Oct. 31. The new contract will continue in effect for eighteen months. A provision allowing the men thirty days lay-off in one year was the only change made in the working conditions.

Philadelphia Hearing Postponed.—The hearing on the proposed lease of the high-speed rapid transit lines in Philadelphia to the Philadelphia Rapid Transit Company has gone over until Nov. 23. Announcement to this effect was made on Nov. 14 by Joseph P. Gaffney, chairman of the finance committee of Councils. The delay is due, it was explained, to the inability of William Draper Lewis, Mayor Smith's legal adviser on transit matters, and Director of City Transit Twining to complete their amendments to the draft ordinance in time.

Assessment of Trenton Property Confirmed.—An increased assessment of \$1,060,845 upon the property of the Trenton & Mercer County Traction Corporation, Trenton, N. J., by the County Board of Taxation for the year 1915 has been affirmed by Justice Minturn in the Supreme Court. The original assessment levied by the Trenton authorities was \$1,003,882. This was increased to \$2,064,727, after a protest had been entered, charging that the assessment in the first instance was too low. A hearing was held with the result that the assessment was increased more than \$1,000,000. The company appealed the case.

City Will Seek to Recover \$2,200,000.—Action has been begun by the city of New York to recover \$2,200,000 from the Brooklyn Rapid Transit Company and the Interborough

Rapid Transit Company based on revelations made during the investigation by the Thompson legislative committee more than a year ago. The claim against the former company is for \$1,990,800, composed of alleged improper interest charges made against the city. The \$210,000 claim against the Interborough Rapid Transit Company consists of the bonuses alleged to have been paid improperly to President Theodore P. Shonts, to the counsel and auditor of the company.

Increase for Binghamton Men.—The Binghamton (N. Y.) Railway has voluntarily increased the wages of its motormen and conductors, effective from Nov. 1. The contract between the company and the men had two years to run, but the former arrangement was set aside. The increase is on the basis of 2 cents an hour above the present scale, an annual increase for the first four years of 1 cent an hour and an increase of 2 cents from the fourth to the fifth year, when the maximum of 29 cents is attained. Under the new arrangement employees attain the maximum wage in five years instead of in ten years. The new five-year rate is higher than the former ten-year rate.

Woman Suggested for Appointment to New York Commission.—William M. Bennett, late Republican candidate for Mayor of New York, has written to Governor Whitman about the pending appointments to the commission for the first district to fill the places made vacant by the retirement of commissioners to accept service with the government. In his letter Mr. Bennett has suggested the appointment of a woman to the board. On this point he said: "I would suggest that the time has come for the appointment of a woman to this position. Women now have the vote, and new duties and interests have been given to them. A woman member of the Public Service Commission would bring to it new views and new life and tend to restore it to the original idea that it was appointed a defender of the public and to protect the public against the rapacity and indifference of public utility corporations."

No I. R. T. Operation Over Long Island Railroad.—The Interborough Rapid Transit Company, New York, N. Y., has announced that it does not propose at the present time or in the near future to undertake the operation of a rapid transit service over the tracks of the Long Island Railroad to Little Neck and to Whitestone, Long Island, which the city proposes to lease as an extension of the Corona line. It had been tentatively understood for several months that the company would undertake the proposed operation when the Public Service Commission for the First District and the company reached an agreement upon the terms of the lease. In view of the refusal of the company to undertake the proposed operation, the commission has directed its chief engineer and chief of rapid transit to proceed with preparation of plans and form of contract for the construction of an extension of the Corona line, which now terminates at Albutis Avenue, Corona, to Main Street, Flushing.

Newlands Committee Said to Favor Government Control.—According to a dispatch to the *New York Times* from Washington, it was reported on Nov. 17 that the Newlands committee had evolved a scheme that would mean government control of the railroads, with government financial support, but leaving the actual operation and ownership with the carriers themselves. The Newlands committee's scheme, it is reported, comprehends a guarantee of earnings of the railroads at a stipulated rate, based on the value of the property. An ample wage would be exacted for the employees. This system, if put into effect, would follow that in vogue in England with respect to the British railways since the beginning of the war. In England the scheme has worked successfully. Official confirmation of the report was not obtained. Under the reported Newlands committee idea the government would, in effect, back the railroads with whatever finances were needed to carry on their operation during the war. The securities would be strengthened by government support. The Newlands committee is composed of members of the interstate commerce committee of the Senate and the interstate and foreign commerce committee of the House. The committee has been engaged for a year in investigating the railroad situation in general.

Financial and Corporate

Annual Report

United Railways Investment Company

The income statement of the United Railways Investment Company, San Francisco, Cal., for the fiscal year ended June 30, 1916, follows:

Dividends on stock owned.....	\$1,718,850
Interest on bonds, notes, etc.....	172,733
Total	\$1,891,583
Expenses	84,441
Interest on securities, notes and loans.....	1,092,339
Provision toward losses on securities owned.....	714,803
Total expenses and charges.....	\$1,891,583
Profit and loss—surplus at beginning of year.....	6,949,014
Credit—discount on bonds purchased for sinking fund.....	106,700
Profit and loss—surplus June 30, 1917.....	\$7,055,714

Continuing the policy announced in last year's report, the receipts of the company were applied to the reduction of its debts. On Aug. 15, 1917, the payment of \$100,000 of 6 per cent serial notes of 1908 extinguished that issue of notes, originally amounting to \$3,500,000. During the year a trustee acquired for the sinking fund an additional \$359,000 of bonds, the largest amount thus far acquired in any one year in the company's history. The loans and notes payable were reduced by \$35,000, and cash on deposit increased \$40,140.

To apply toward the reduction of the loss that the company had sustained through its subsidiary, the United Railroads of San Francisco, the investment company started a reserve account and put aside for this purpose \$714,802. Other appropriations in consideration by the board are directed to the same end. No interest has been accrued on the notes of the United Railroads of San Francisco or on its 6 per cent gold bonds of 1910 since Feb. 1, 1917.

The United Railways Investment Company, it will be recalled, is solely a holding company, having interests in two widely separated fields, around Pittsburgh, Pa., and in California. Its interests in the Pittsburgh district are represented by holding of stock in the Philadelphia Company, which controls the Pittsburgh Railways and other utilities. The annual reports for this group, whose fiscal year ends March 31, were published in the issue of July 14, 1917.

The interests of the investment company in California are represented by holding of stock in the California Railway & Power Company, which in turn controls the United Railroads of San Francisco and lighting companies. The results from operation of the United Railroads of San Francisco for years ended June 30, 1916 and 1917, follow:

	1917		1916	
	Amount	Per Cent	Amount	Per Cent
Passenger revenue	\$7,399,411	99.2	\$7,692,258	99.2
Other operating revenue.....	58,730	0.8	59,485	0.8
Total operating revenues	\$7,458,141	100.0	\$7,751,743	100.0
Maintenance of way and structures	418,983	5.6	550,046	7.1
Maintenance of equipment.....	379,696	5.1	371,561	4.8
Transportation	3,292,903	44.1	3,353,488	43.2
General	672,719	9.0	630,139	8.1
Total operating expenses.....	\$4,764,301	63.8	\$4,909,234	63.2
Taxes	487,900	6.6	508,800	6.6
Total operating expenses and taxes	\$5,252,201	70.4	\$5,414,034	69.8
Operating income	\$2,205,940	29.6	\$2,337,909	30.2
Other income	163,121	2.2	178,525	2.3
Gross income	\$2,369,061	31.8	\$2,516,234	32.5
Income charges	511,218	6.9	515,470	6.7
Income before deducting bond interest	\$1,857,843	24.9	\$2,000,764	25.8
Bond interest	1,594,364	21.4	1,604,026	20.7
Net income	\$263,479	3.5	\$396,738	5.1

During the last fiscal year the decline in the earnings of the United Railroads of San Francisco continued. The loss

of \$275,836 or 3.5 per cent in passenger revenue in the preceding fiscal year was surpassed by the loss of \$292,847 or 3.8 per cent in the year ended June 30, 1917. Other operating revenue also decreased, so that the total operating revenues in the last year showed a falling off of \$293,602 or 3.8 per cent, as compared to \$272,351 or 3.4 per cent the year before.

The operating expenses, however, were not so large in 1917 as in 1916, the decrease being \$144,933 or 2.9 per cent, as compared to an increase of \$147,408 or 3.1 per cent in the preceding fiscal year. The falling off in the last year was due in the main to a decrease of \$131,063 or 23.6 per cent in maintenance of way and structures and \$60,585 or 1.8 per cent in transportation. Taxes decreased \$20,900 or 4.1 per cent. The final result after small changes in the subsequent items was a loss of \$133,259 or more than 33 per cent in net income.

After a profit and loss charge of \$550,000 for depreciation and other adjustments, the surplus as of June 30, 1917, amounted to \$992,091. The net increase in the depreciation reserve for the year was \$356,915, the reserve at the end of the year totaling \$1,313,413. During the last year additions and betterments of property were made to the extent of \$180,735. Up to June 30, 1917, an aggregate amount of \$2,435,000 par value of mortgage securities had been retired and cancelled from investment made with sinking fund money.

Blue Hill Street Railway Sold

The interest of Stone & Webster in the Blue Hill Street Railway, Canton, Mass., has been sold to Michael A. Cavanaugh, Roxbury, Mass. The road was organized in 1899 and includes about 17 miles of track in the towns of Milton, Canton and Stoughton. It connects at Mattapan with the Boston Elevated Railway and has been under the management of Stone & Webster since it was built. The gross revenue for 1916 was \$92,962, operating expenses were \$74,611, and fixed charges \$19,890, leaving a deficit of \$1,539. The road has an unlimited franchise. It has been hard hit by automobile competition in the last few years. Mr. Cavanaugh stated to the representative of the ELECTRIC RAILWAY JOURNAL at Boston that for the present F. T. Buchanan will continue as superintendent. The following officers and directors of the company have been elected: Michael A. Cavanaugh, president and general manager; Ray C. Cavanaugh, vice-president and treasurer; James P. Dunn, clerk. The officers and Allan Forbes, James Meehan, William E. Russell, Everett Maxwell and S. F. O'Hara, directors.

Stock for Employees and Customers

The Mahoning & Shenango Railway & Light Company, Youngstown, Ohio, has arranged for the sale of the 7 per cent cumulative preferred stock of the company to employees or customers at par—\$100 a share—in ten monthly payments. Not more than twenty shares will be sold to any one employee or customer. This is in order that as many as possible of those who may wish to avail themselves of the opportunity may do so. The basis of the payments is as follows:

The first payment of \$10 on each share must be made at the time of the subscription. A similar payment of \$10 a share will be required on or before the tenth of each succeeding month till the full price of \$100 a share has been paid. Certificate of stock will be delivered when the final payment has been made. Payments may be made at the main office of the company in Youngstown, at the Electric Shop, Youngstown, or at the offices in Sharon and New Castle. Interest at the rate of 6 per cent per annum will be paid by the company on all installments paid in and the full amount of this interest, figured on the basis of each payment having been made on the tenth of each month, will be deducted from the final payment. Subscribers will have the option of withdrawing all installments paid in upon reasonable notice and the company will pay on all such sums withdrawn interest at the rate of 4 per cent per annum.

New York Lines Lose for Year

Strikes and Rising Costs Cause Decline of 20 per Cent in Net Corporate Income of Metropolitan Carriers

The electric railways in New York, N. Y., showed an increase of \$1,555,599 or 1.5 per cent in railway operating revenues for the year ended June 30, 1917. This gain was offset, however, by a rise of \$3,678,088 or 7.0 per cent in operating expenses. The result was a decline of \$2,610,358 or 20.2 per cent in the net corporate income. These totals, it should be said, have been figured without the making of any deductions for intercompany transactions.

The decline in earning power was directly due, in a considerable degree, to the rising costs of operation, which affected both the large and the small companies. The decline was helped, however, by the drain upon revenues caused by the strikes on various lines during the summer months of 1916. The surface lines in Manhattan alone showed a falling off of \$3,568,113 in railway operating revenues, and the Bronx surface lines \$701,939. A large part of these decreases is attributable to the falling off of traffic during the strike period. On the rapid transit lines, where the strike agitation was of shortest duration, the gains in revenues were substantial.

The foregoing figures are given in the provisional summary just issued by the Public Service Commission for the First District of New York. This summary, prepared from the quarterly reports of the carriers, is shown in part in the accompanying table. Some of the minor companies in each group are not shown in detail, although they are represented in the totals for boroughs and in the final totals for the whole city.

For the quarter ended June 30, 1917, the railway operating revenues at \$26,604,367 showed an increase of \$573,619. The expenses at \$14,359,388, however, increased \$913,231. The net corporate income totaled \$3,581,584, a gain of \$304,537. The railway operating revenues and operating expenses of some of the larger companies in the Metropolitan district for this quarter follow:

	Railway Operating Revenues		Operating Expenses	
	Amount	Increase	Amount	Increase
Hudson and Manhattan	\$1,085,450	\$58,600	\$470,099	\$84,321
Interborough—Subway	5,644,499	558,578	2,181,510	398,290
—Elevated	4,645,254	298,461	2,176,992	347,075
Brooklyn Rapid Transit	7,762,285	291,770	4,630,737	195,362
New York Railways	3,137,903	*\$361,009	1,879,744	*251,434
Third Ave. (Manhattan)	1,052,752	*19,333	638,135	145,937
Union Railway (Bronx)	748,027	*49,207	462,541	*27,020

*Denotes decrease from corresponding period in 1916.

Loyal Line Sale Offer

The Board of Public Works of Seattle, Wash., has received an offer from Harry Whitney Treat, president of the Loyal Railway, to sell the Loyal Heights line to the city for \$70,000 payable in utility bonds, interest and principal to be secured by the revenues of the Municipal Railway System. The offer was made to the board following its call for bids for construction of a municipal railway extending from Market Street in Ballard to the north city limits at Thirty-second Avenue N. W., and West Eighty-fifth Street. The Treat bid was not opened by the board because of a request from Meacham & Babcock, Seattle, that they receive time to submit a bid for a line on Twenty-second Avenue N. W., from Market Street. Mr. Treat made a similar sale offer to the Council on Sept. 7, 1911. At that time A. L. Valentine, superintendent of utilities; Councilman George R. Cooley and Councilman A. F. Haas were delegated to value the property. They reported to the Council that the line, with all its equipment, was worth \$39,180, and could be reproduced for \$53,355. Steps have been taken by the City Council to provide a bond issue to cover the cost of purchase of the Loyal Heights line or to construct a new line.

The Loyal Heights line is operated on Twentieth Avenue Northwest from Market Street to West Sixty-seventh Street on the tracks of the Western Washington Power Company, for which the Loyal Heights Company is obligated to pay 11 cents a mile for each car and in addition 2 cents a kilowatt-hour for power. The contract which the Loyal Heights company has with the Western Washington Power Company was made on May 1, last, for a period of five years, and may be canceled by either party to the agreement on ninety days' notice.

Abilene (Tex.) Street Railway.—A. Blum, Galveston, and others, bondholders of the Abilene Street Railway, have filed suit in the district court at Abilene praying for the appointment of a receiver for the company.

Barcelona Traction, Light & Power Company, Ltd., Toronto, Ont.—According to the report of the Barcelona Traction, Light & Power Company, Ltd., for the calendar year 1916, the results of the controlled tramways in Barcelona showed the usual improvement. They earned a surplus over the common stock dividend which the holding company guarantees. The Sarria Electric Railway & Tramway showed a steady increase in receipts. The unrest in Spain has not so far affected the working of the properties. The shares of the Barcelona tramway system purchased by the

FINANCIAL AND OPERATING DATA OF ELECTRIC RAILWAYS IN NEW YORK CITY FOR YEAR ENDED JUNE 30, 1917

COMPANY	RAILWAY OPERATING REVENUE*		OPERATING EXPENSES*		RAILWAY TAXES	NET CORPORATE INCOME*		REVENUE CAR-MILES		NUMBER OF TRANSFERS COLLECTED	REVENUE PASSENGERS	
	Amount	Year's Increase	Amount	Year's Increase		Amount	Year's Increase	Amount	Year's Increase		Amount	Year's Increase
INTERBOROUGH (Subway)	21,454,892	2,097,640	8,117,602	1,242,410	801,511	\$8,885,358	172,031	73,671,808	1,630,672	414,193,992	42,688,674	
—Elevated	18,411,253	1,876,978	8,465,690	1,332,716	2,069,873			72,259,243	2,951,234	349,380,093	37,133,297	
BROOKLYN RAPID TRANSIT	30,040,420	1,574,676	18,156,639	1,097,025	1,968,683	2,708,980	D417,139	100,018,941	D1,461,491	182,174,138	591,607,524	28,261,198
MANHATTAN SURFACE ROADS	18,609,674	D3,568,113	12,944,391	D374,084	1,617,888	D1,056,952	D1,382,128	44,641,948	D8,929,118	104,558,486	349,788,114	D77,585,733
New York Railways	11,494,109	D2,220,422	7,868,809	D505,268	1,032,011	D148,052	D2,813	28,918,483	D5,442,503	85,088,109	229,539,683	D45,241,508
Second Avenue	747,092	D131,556	1618,155	6,899	65,193	D123,484	D132,991	2,718,197	D323,205	815,874	15,204,764	D2,844,315
Third Avenue (incl. Kings-bridge)	3,574,344	D491,139	12,239,170	69,833	309,748	D1264,208	D480,840	5,772,527	D1,305,023	6,653,814	43,109,017	D11,170,827
BRONX SURFACE ROADS	3,769,485	D701,939	3,062,742	88,189	245,547	D424,701	D796,328	14,087,460	D2,614,381	30,501,260	71,153,027	D13,382,710
New York City Interboro.	634,962	D93,207	506,485	83,340	44,722	D191,128	D178,772	2,252,107	D357,678	4,740,895	13,254,058	D1,993,164
Union (incl. Bronx Traction)	2,513,512	D395,535	11,978,153	40,852	156,826	D198,439	D427,996	9,127,319	D1,539,833	21,887,502	47,083,709	D7,718,742
Westchester Electric	422,291	D157,938	376,499	D64,733	31,413	D170,567	D101,407	1,881,391	D589,819	1,975,632	6,867,645	D2,555,620
[Yonkers]	563,400	D205,109	1494,548	D33,846	31,962	D187,529	D189,764	2,233,851	D681,781	3,311,471	10,930,110	D4,201,170
QUEENS SURFACE ROADS (incl. B. R. T.)	2,580,246	D136,560	2,321,468	D12,094	118,334	D462,279	D216,370	10,411,869	D447,038	8,087,115	50,906,681	D3,260,722
New York & Queens Co.	1,273,583	D162,180	1,304,404	D74,553	57,323	D384,400	D89,830	5,604,524	D542,566	7,571,232	25,179,452	D3,194,156
New York & Long Island	417,756	D4,104	357,364	20,179	21,607	D29,926	D26,921	1,662,931	D14,270	94,116	7,395,930	D388,595
New York & North Shore	155,361	D7,985	1108,832	5,495	11,603	D8,882	D10,914	596,234		147,191	2,756,567	D144,963
Manhattan & Queens	328,102	36,286	232,041	34,292	12,273	D19,883	D85,857	1,125,405		128,274	8,093,565	923,367
OTHER COMPANIES	1,075,533	81,149	801,551	62,503	69,040	60,072	D1,403	3,939,068	D18,439	2,432,107	23,225,076	960,142
Richmond Light & R. R.	429,751	22,201	320,534	30,608	21,804	140,802	D8,972	1,512,743	D49,130	1,746,960	8,346,914	396,630
Staten Island Midland	341,623	D1,446	317,037	18,868	16,516	D59,999	D32,942	1,682,342	D45,382	685,147	6,672,468	D49,935
Grand total	\$100,183,784	\$1,555,599	\$55,716,495	\$3,678,088	\$7,184,852	\$10,428,921	D\$2,610,358	327,209,048	D8,777,562	327,753,106	1,918,812,226	20,076,611

D—Decrease or deficit.

*The totals for boroughs, "systems," etc., have been made without deducting intercompany transactions.

†Exclusive of Yonkers Railroad.

‡No charge included for depreciation in addition to actual disbursements for repairs.

§Balance applicable to adjustment income bonds.

¶Exclusive of \$217,295 for the year, deficit from operation of subway lines to which company is entitled under Contract 3.

holding company are still held as security for the balance of the purchase price and will probably remain so until after the war.

Catskill (N. Y.) Traction Company.—George B. Austin, president of the Chamber of Commerce of Catskill, reports that the committee appointed by that body to inquire into the situation confronting the Catskill Traction Company was not successful in interesting local capital in the matter to an amount sufficient to take over and operate the railway. The property was sold recently under foreclosure to Joseph Joseph & Brothers Company, New York, who will now proceed to dismantle and scrap the line.

Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro, Pa.—The Maryland and Pennsylvania Public Service Commissions have approved the sale of the Chambersburg, Greencastle & Waynesboro Street Railway to the Hagerstown & Frederick Railway.

Detroit (Mich.) United Railway.—The \$600,000 of 6 per cent bonds of the Detroit, Ypsilanti & Ann Arbor Railway, controlled by the Detroit United Railway, which came due on Nov. 1, were paid at maturity at the office of the Union Trust Company, Detroit. In connection with this payment, the Detroit, Jackson & Chicago Railway will issue \$600,000 of 5 per cent consolidated mortgage bonds, dated Feb. 1, 1907, due Feb. 1, 1937.

Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind.—Holders of the first and refunding mortgage 5 per cent twenty-year gold bonds, preferred stock, common stock and dividend certificates of the Fort Wayne & Northern Indiana Traction Company have been notified that a committee, consisting of William A. Tucker, Jay Cooke, J. Levering Jones, Randal Morgan, Thomas E. Murray and Henry Sanderson, has been formed to represent the security holders in the reorganization of the company. Bond and stockholders are urged to deposit their securities with the Central Trust Company, New York, under a protective agreement now on file with the depository. The reasons for the Fort Wayne interest default were reviewed at length in the *ELECTRIC RAILWAY JOURNAL* of Sept. 15, page 457.

Mahoning & Shenango Railway & Light Company, Youngstown, Ohio.—Lee, Higginson & Company, Boston, Mass., are offering at 94 and interest to yield 7.35 per cent \$500,000 of first and consolidated mortgage 5 per cent gold bonds of the Mahoning & Shenango Railway & Light Company dated Nov. 1, 1915, due Nov. 1, 1920, but callable as a whole, but not in part, at 101 and interest on sixty days' notice. The Guaranty Trust Company, New York, N. Y., is trustee under the mortgage securing the bonds. The first and consolidated mortgage bonds are preceded by \$5,250,000 of underlying divisional mortgage bonds and are followed by \$3,500,000 of 7 per cent preferred stock and \$10,628,600 of common stock.

Manhattan & Queens Traction Corporation, New York, N. Y.—Arthur C. Hume, New York, was appointed receiver of the Manhattan & Queens Traction Corporation on Nov. 15 by Judge Hatfield of the United States District Court for the Eastern District of New York. Mr. Hume is also receiver of the South Shore Traction Company, the franchises and physical property of which were purchased by the Manhattan & Queens Traction Corporation. Mr. Hume, as receiver of the South Shore Traction Company, has a suit pending in the Federal Court at Brooklyn to recover \$1,750,000 from the city of New York for damages to the company through hindrance during the construction period.

Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company, Minneapolis, Minn.—Federal Judge Booth on Nov. 13 granted the petition of the Continental & Commercial Trust & Savings Bank, Chicago, to have \$135,000 disbursed among the holders of collateral notes against the Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company. Receiver C. E. Warner was ordered to turn over that amount to the Minneapolis Trust Company.

Northumberland County Traction Company, Sunbury, Pa.—The property of the Northumberland County Traction Company included in the system of the Sunbury & Susquehanna Railway, was sold under foreclosure recently at Philadelphia for \$200,000 to bondholders.

Owensboro (Ky.) City Railroad.—Receivership for the Owensboro City Railroad is believed to have been averted by the action of the directors of the company in arranging to have the holders of the general mortgage bonds of the company forego their interest for the next three years. The bonds outstanding amount to \$200,000. Instead of paying out the \$36,000 in interest, that sum, it is said, will be used in improving the system. It is probable also that the plan of selling six tickets for a quarter will be discontinued at an early date.

Philadelphia (Pa.) Rapid Transit Company.—Judge Dickinson of the Federal Court has ruled that federal taxes to the amount of \$73,759 should be returned to three underlying companies of the Philadelphia Rapid Transit Company on the ground that they had been collected illegally. The companies involved were the Market Street Passenger Railway, the Union Traction Company and the Philadelphia Traction Company. It was argued that the corporate existence of the complainant companies was kept only to receive income for disbursement among their stockholders and for the conduct of normal transactions. In upholding the companies, Judge Dickinson awarded full interest on the taxes from 1913. Assistant United States Attorney Kremp has announced he will appeal from the decision.

Quebec Railway, Light, Heat & Power Company, Ltd., Quebec, Canada.—The gross earnings from operation of the Quebec Railway, Light, Heat & Power Company for the year ended June 30, 1917, totaled \$1,832,032 as compared to \$1,731,732 in 1916. This was an increase of \$100,299 or 5.8 per cent for the last year. After the addition of miscellaneous income amounting to \$230,851, the total revenue from all sources at \$2,062,883 represented an increase of \$94,281. The operating and maintenance expenses, however, showed a greater increase, for the amount in the last year of \$1,155,969 was greater by \$126,218 than that in the year before. The fixed charges and taxes totaled \$706,326, leaving a net surplus of \$200,587 for the year. This compares with a net surplus of \$215,403 in the year preceding. After making provision for obsolete cars on certain divisions, discount account, etc., there remained a total credit to surplus account of \$684,572. The maintenance expenses during the year totaled \$226,366, and the sum of \$302,663 was expended on capital account.

Seattle (Wash.) Municipal Railway.—The bond issue of \$40,000, required for the extension of the Seattle Municipal Railway to Leary Avenue and Market Street in Ballard, has been oversubscribed by the people of Seattle. The bonds were sold on terms of 10 per cent cash, 45 per cent payable on Dec. 1 and 45 per cent payable on Jan. 1. The largest single purchase was for \$2,000. Many payments were made with Liberty bonds, which the city arranged to accept at par as cash.

Shore Line Electric Railway, Norwich, Conn.—The Shore Line Electric Railway of Rhode Island, for which a charter was secured as noted in the *ELECTRIC RAILWAY JOURNAL* of May 5, page 844, has organized with R. W. Perkins as president. The separate company in Rhode Island will absorb all the rights possessed by the Pawcatuck Valley Street Railway, Ashway & Westerly Railway and the Westerly & Connecticut Railway, all owned previously by the Norwich & Westerly Traction Company.

Springfield (Mass.) Street Railway.—The Massachusetts Public Service Commission has authorized the Springfield Street Railway to issue mortgage bonds to an amount not to exceed \$3,275,000, payable twenty years from their date and bearing interest at not more than 6 per cent per annum. The proceeds of bonds amounting to \$2,305,000 will be applied exclusively to the payment, refunding or retiring of bonds issued by the Springfield Street Railway, the payment of which has been assumed by that company by reason of the purchase of railway property or franchises of certain other electric railways, including the Springfield Street Railway, the Western Massachusetts Street Railway, the Springfield & Eastern Street Railway and the Woronoco Street Railway. The proceeds of bonds amounting to \$970,000 will be devoted exclusively to pay for borrowed money, to liquidate indebtedness incurred for additions and betterments and to fund floating debt incurred in providing the Springfield Street Railway with working capital.

Electric Railway Monthly Earnings

ATLANTIC SHORE RAILWAY, SANFORD, ME. \$						
Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income	
1m., Oct., '17	\$11,804	\$11,187	\$617	\$431	\$186	
1 " " '16	25,367	24,173	1,194	668	526	
BATON ROUGE (LA.) ELECTRIC COMPANY						
1m., Sept., '17	\$19,710	\$9,919	\$9,791	\$3,601	\$6,190	
1 " " '16	17,285	8,352	8,933	3,257	5,676	
12 " " '17	227,917	*112,537	115,380	42,507	72,873	
12 " " '16	208,123	*103,899	104,224	38,958	65,266	
BERKSHIRE STREET RAILWAY, PITTSFIELD, MASS.						
1m., Sept., '17	\$106,759	*\$89,655	\$17,104	\$27,382	†\$10,137	
1 " " '16	90,489	*72,639	17,850	27,700	†19,652	
9 " " '17	834,909	*714,807	120,102	247,788	†126,590	
9 " " '16	747,307	*612,439	134,868	233,982	†197,294	
BROCKTON & PLYMOUTH STREET RAILWAY, PLYMOUTH, MASS.						
1m., Sept., '17	\$11,699	*\$11,032	\$667	\$1,259	†\$592	
1 " " '16	12,496	*9,569	2,927	1,102	1,825	
12 " " '17	124,645	*122,916	1,729	14,231	†12,508	
12 " " '16	120,778	*104,789	15,988	13,240	2,748	
CAPE BRETON ELECTRIC COMPANY, SYDNEY, N. S.						
1m., Sept., '17	\$69,805	*\$25,628	\$14,177	\$6,551	\$7,626	
1 " " '16	33,804	*18,190	15,614	6,568	9,046	
12 " " '17	443,606	*274,101	169,505	78,701	90,804	
12 " " '16	385,443	*225,937	159,506	78,507	80,999	
CLEVELAND, PAINESVILLE & EASTERN RAILWAY, CLEVELAND, OHIO						
1m., Sept., '17	\$52,596	*\$33,414	\$19,182	\$11,565	\$7,617	
1 " " '16	43,680	*25,083	18,597	11,454	7,142	
12 " " '17	409,407	*250,536	158,871	105,146	53,725	
12 " " '16	351,576	*195,925	155,651	102,553	53,098	
COLUMBUS (GA.) ELECTRIC COMPANY						
1m., Sept., '17	\$91,872	*\$39,153	\$52,719	\$31,101	\$21,618	
1 " " '16	77,658	*30,491	47,167	28,630	18,537	
12 " " '17	1,037,936	*396,824	641,112	349,619	291,493	
12 " " '16	829,894	*341,144	488,750	344,041	144,709	
CONNECTICUT COMPANY, NEW HAVEN, CONN.						
1m., Sept., '17	\$847,274	*\$657,593	\$189,681	\$102,429	\$109,525	
1 " " '16	847,871	*619,080	228,791	97,959	†181,761	
12 " " '17	7,580,645	*5,868,535	1,712,110	880,593	†984,934	
12 " " '16	7,186,358	*4,976,086	2,210,272	886,674	†1,526,772	
EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEX.						
1m., Sept., '17	\$77,984	*\$44,016	\$33,968	\$12,058	\$24,299	
1 " " '16	72,387	*37,777	34,610	8,753	25,857	
12 " " '17	921,734	*504,460	417,274	128,470	†300,115	
12 " " '16	817,376	*432,879	384,497	106,292	278,205	
EL PASO (TEX.) ELECTRIC COMPANY						
1m., Sept., '17	\$105,017	*\$67,806	\$37,211	\$6,592	\$30,619	
1 " " '16	92,264	*60,949	31,315	5,120	26,195	
12 " " '17	1,278,051	*767,460	510,591	63,385	447,206	
12 " " '16	1,068,260	*622,131	446,129	55,807	390,322	
FEDERAL LIGHT & TRACTION COMPANY, NEW YORK, N. Y.						
1m., Sept., '17	\$237,357	*\$179,256	\$58,101	\$50,583	\$7,518	
1 " " '16	203,099	*134,446	68,653	49,298	19,355	
9 " " '17	2,036,089	*1,427,568	608,521	442,709	165,812	
9 " " '16	1,860,223	*1,221,301	608,922	438,526	170,396	
GALVESTON-HOUSTON ELECTRIC COMPANY, GALVESTON, TEX.						
1m., Sept., '17	\$185,632	*\$118,288	\$67,344	\$38,084	\$29,360	
1 " " '16	159,844	*102,747	57,097	36,587	20,510	
12 " " '17	2,002,741	*1,329,485	673,256	446,116	227,140	
12 " " '16	1,932,169	*1,228,006	704,163	437,883	266,280	
HOUGHTON COUNTY TRACTION COMPANY, HOUGHTON, MICH.						
1m., Sept., '17	\$28,607	*\$18,269	\$10,338	\$5,085	\$5,253	
1 " " '16	26,730	*15,175	11,555	5,240	6,315	
12 " " '17	341,753	*206,608	135,145	61,795	73,350	
12 " " '16	317,341	*179,209	138,132	64,760	73,372	
JACKSONVILLE (FLA.) TRACTION COMPANY						
1m., Sept., '17	\$54,794	*\$38,893	\$15,901	\$155,778	\$123	
1 " " '16	50,147	*35,316	14,831	15,400	†560	
12 " " '17	668,171	*448,290	219,881	187,862	32,019	
12 " " '16	621,079	*423,758	197,321	181,606	15,715	
NORTHERN OHIO TRACTION & LIGHT COMPANY, AKRON, OHIO						
1m., Sept., '17	\$553,468	*\$347,053	\$206,415	\$73,504	\$132,910	
1 " " '16	446,666	241,405	205,261	90,117	115,143	
9 " " '17	4,736,528	*2,944,934	1,823,787	701,368	1,122,419	
9 " " '16	3,780,743	1,888,573	1,892,170	857,521	1,034,649	
REPUBLIC RAILWAY & LIGHT COMPANY, YOUNGSTOWN, OHIO						
1m., Sept., '17	\$426,250	*\$280,674	\$145,576	\$87,100	†\$63,948	
1 " " '16	334,443	*183,689	150,754	69,022	†82,177	
12 " " '17	4,536,528	*2,944,934	1,591,594	957,608	†683,362	
12 " " '16	3,817,024	*2,220,241	1,596,783	791,164	†820,721	

*Includes taxes. †Deficit. ‡Includes non-operating income. §On May 1, the Atlantic Shore Railway was divided at York Beach, the western end passing to the operating control of the Portsmouth, Dover and York Street Railway. The 1916 figures are for the entire system; the 1917 ones for the system as now constituted.

Traffic and Transportation

Fare Increase Allowed in New Jersey

Commission Authorizes Bridgeton & Millville Traction Company to Abolish Six Tickets for a Quarter—Comment on Trenton Case

The Board of Public Utility Commissioners of New Jersey has authorized the Bridgeton & Millville Traction Company to abolish six tickets for a quarter and fifty for \$2, and establish in lieu thereof a straight 5-cent fare. The application of the company is granted because the board found that there was no contract to prevent a higher rate of fare, and because the company has not earned sufficient money to give an adequate return on the capital invested.

DIFFERENCE BETWEEN BRIDGETON AND TRENTON CASES

This decision is of interest in view of the attempt of the Trenton & Mercer County Traction Corporation to establish a 5-cent fare and cancel its franchise contract with the city of Trenton, which requires it to sell six tickets for a quarter. In disposing of the Bridgeton case, the commission makes direct references to one of the fundamental differences between this application and that of the Trenton corporation. In the Bridgeton case there were no contractual obligations to give six tickets for a quarter, while in the Trenton case such an obligation has been held to exist. In the Trenton case, which has gone through the Supreme Court on review of the utility board's refusal to allow abolition of the six tickets for a quarter, Justice Swayze held, in effect, that the company had made a solemn contract with the city of Trenton to give six tickets for a quarter and that if the company was unable to earn enough money with this rate of fare it was the company's fault. On the point of contractual obligation, referring directly to the Trenton & Mercer County Traction Corporation, the commission says:

"Numerous ordinances obtained by the electric railway from the several municipalities it served were offered in evidence. There is no reference in any of them to the rate of fare to be charged excepting the ordinance of the city of Bridgeton granting a franchise to the Bridgeton Rapid Transit Company, which contains a provision that the rate of fare shall not exceed 5 cents. The present case, therefore, does not raise the question of the contractual obligations between the company and the municipalities that were discussed in the cases of the Trenton & Mercer County Traction Corporation and the Northampton, Easton & Washington Traction Company."

In the case of the Bridgeton & Millville Traction Company the commission finds that the earnings of the company from 1900 to June, 1917, show no substantial increase. In 1907 the gross earnings were \$121,357, as compared with \$121,252 in 1917. During the ten-year period they were as low as \$107,891, in 1901, and as high as \$125,897, in 1913. The company has paid no dividends for the last two years. Its average rate of dividends earned for this period was 1.86 per cent on its capital stock.

WHAT A PUBLIC UTILITY SHOULD BE ALLOWED TO EARN

The decision of the commission in the Bridgeton & Millville case carries some comment as to what a public utility should be allowed to earn. On this point the decision says: "A public utility should be allowed to earn enough revenue to provide for the following outgo, viz.: (1) Reasonable operating expenses sufficient to provide for conducting its business and for current repairs and maintenance. (2) Taxes imposed upon it. (3) A sum sufficient to provide for annual depreciation accruing over and above current repairs and maintenance, in order to preserve investment intact. (4) A return on investment sufficient to command needed capital.

"It must have items one and two very early in its history. Items three and four are frequently not received

until the utility is fairly well developed. In the long run, however, all four items must be earned by the utility; if not, its capital becomes impaired, it cannot secure money for replacements or extensions, it will cease to furnish the service for which it is organized, and the public will be deprived of such service.

"In determining whether the discontinuance of the sale of six tickets for a quarter should be permitted, the need of additional revenue to meet public requirements, especially for better service, must receive consideration. The present high cost of operation shows no sign of recession. The board must meet existing conditions in a practical manner."

Controversy Over Heating Cars

Brooklyn Rapid Transit Company Seeks Relief from Commission Order—Test Under New Conditions Allowed

The Brooklyn (N. Y.) Rapid Transit Company on Nov. 14 asked the Public Service Commission for the First District of New York to suspend its heating order during the rush hours. J. J. Dempsey, superintendent of the elevated lines of the company, explained to the commission that it is not proposed to stop heating the cars altogether, but to heat them probably an hour before they were placed in service for the rush hours so that only a small percentage of the energy now used for heating would be necessary to maintain the temperature at a reasonably comfortable figure. He said that to furnish heat for all cars in accordance with the original commission order would mean the consumption of from 100 to 400 tons of coal a day, according to the weather, or the expenditure of about 30 per cent of the total output for heating alone. Only in exceptionally cold weather would it be necessary under the plan suggested by the company to have more than two points of heat in the cars, and much of the time only one point would be necessary. The commission put the matter over for a further hearing on Nov. 19.

The commission on Nov. 21 approved the plan of the company for the test of proposed new heating arrangements on its cars. The commission directed also that the test contemplated be put into operation under the following provisions:

PROVISIONS OF THE TEST

The plan of the company is to heat a few cars at the depot to a certain temperature, then turn off the heat and send the cars out.

The cars on which such tests are to be made shall not number more than three on each surface line during each rush hour, and two complete trains on each elevated or subway line.

The cars shall be selected by the electrical engineer and the chief of the transit bureau of the commission.

The tests shall be made between the hours of 7 and 9 a. m. and 5 and 7 p. m. on each week day, and shall continue during the next two weeks or such further period as the commission shall prescribe.

The electrical engineer and the chief of the transit bureau of the commission will direct and supervise the tests and they shall have the power of prescribing the manner of making the tests and record their results.

Full and complete records shall be kept, showing the tests made, the lines, type of car, testing conditions, number of passengers carried on each car, the temperature inside and outside the cars at suitable intervals, and any other relevant facts, all of which shall be submitted to the commission at the adjourned hearing in the case on Dec. 2.

The representative of the commission on any test car shall have the power at any time to order the test on that car terminated and to require heat turned on to the extent deemed necessary.

The commission specifically states that it shall not deem as a violation of any provision of the heating order of April 26, 1912, any act or omission of the company or of any of its officers and employees with reference to any car used in such experimental test and displaying such sign, nor any temperature maintained in such car during any period of the experiment.

The present order of the commission requires the company to maintain a temperature of not less than 40 deg. Fahr., or more than 65 deg. from Oct. 15 to April 15. The order is effective except when the company is prevented from complying with it by storm, accident or other emergency beyond the company's control.

THE NEW MAYOR OBJECTS

On Nov. 16 Mayor-elect John F. Hylan sent a letter to Oscar A. Straus, chairman of the commission, in which he said that he felt certain the commission would not grant the suspension of the heating order and that the commission would see to it that the law was properly enforced and that cars were properly heated as the health of the community demanded. He said:

"If the transit corporations do not live up to the law I will ask the proper authorities to take action."

The Mayor-elect was invited by Mr. Straus to attend the hearing on Nov. 19 but he was unable to be present.

On Nov. 20, the Mayor-elect made additional comment in regard to his position on the request of the company for relief from the heating requirements of the commission. He is reported to have said:

"If the Public Service Commission does not compel the Brooklyn Rapid Transit Company to heat its cars during the coming winter, as required by law, I shall ask all the civic bodies of New York City to accompany me to Albany to ask for the removal of the commission."

Petition for Re-establishment of Through Service Dismissed

Boston Company Not Required to Establish Long and Circuitous Surface Line—In Another Case Discontinuance of Service Is Not Approved

A petition of the Mattapan Civic Improvement Association for the re-establishment by the Boston Elevated Railway of through service formerly operated between Mattapan Square and the North Station via the Dorchester and downtown surface routes has been dismissed by the Massachusetts Public Service Commission. The company discontinued normal-hour service on this line in 1912, but gave rush-hour service over it in each direction until the spring of 1916. Transportation facilities in the Mattapan-Franklin Park district have been improved in recent years by the building of an island transfer station at Franklin Park, where the through line mentioned in the petition branched off the main line from Mattapan to the rapid transit elevated stations in the southern part of the city. With the opening of the Egleston Square Terminal the Dudley Street line from Mattapan was diverted to that point and the service was increased by operating two-car surface trains on a four-minute surface headway.

CHANGES IMPROVE SERVICE

The petitioners admitted that these changes gave greatly improved service to about 12,000 passengers who travel daily between Mattapan and downtown Boston. Counts show that about 550 passengers daily travel from the Mattapan district to the Dorchester-South Station district over the route in question in the petition. The board recognizes that these are inconvenienced by the absence of through service, but says that "any attempt to operate a surface line of more than 7.5 miles in length over a circuitous route and narrow and congested city streets is bound to result in slow, irregular and generally unsatisfactory service. Moreover, such service is wasteful to operate and could not be furnished with the company's available equipment and facilities, except by depriving other communities of needed service."

It is expected that the Dorchester Tunnel will be completed to Andrew Square in the near future, and in connection with the rearrangements of service which will then become necessary, it may be found possible to operate a through line from Mattapan Square to Andrew Square, which the board thinks would meet all reasonable demands of the petitioners in the present case. The present petition is dismissed.

The commission has issued a finding disapproving two petitions of the Boston Elevated Railway for discontinuance of service on the Fields Corner-Dorchester Street and Harvard Square-Cottage Farm-Park Street Boston lines. The board had previously refused to allow the company to discontinue these services (February and July, 1916). No evidence was presented by the company of any rearrangements of its service or any change in local conditions which would warrant a reversal of the former orders, the board states. It was, however, suggested by the company that war conditions might make it necessary to curtail service, owing to the inability of the company to obtain the necessary labor, fuel and supplies. The commission holds that any change in present methods of operation upon that ground would appear to be premature. Petitions may be renewed later if necessary.

"L" Fare Increase to Be Sought

Basis of Increase for Chicago Elevated Lines Will Probably Be Through the Establishment of Fare Zones

Plans are beginning to take definite form whereby the Chicago Elevated Railroads will make application to the Public Utilities Commission of Illinois for an increase in the rate of fare. At the present time a considerable portion of the passengers ride a distance of 7 to 10 miles on a single fare of 5 cents, and there is also a large amount of riding between different sections of the city which involves a haul of 15 and even 20 miles for a single fare. The average length of haul on the entire elevated system is 6.48 miles. It is this long-distance traffic which is particularly unprofitable to the company. It is therefore probable that the means sought of increasing the revenue to meet the greatly increased operating expenses will be an adoption of a zone system whereby passengers will pay a fare commensurate with the length of ride beyond a certain 5-cent zone limit.

Company Upheld in Fare Case

Discontinuance of Four-Cent Tickets by Seattle Company Under Commission Order Sustained by Court

The recent action of the State Public Service Commission at Olympia, Wash., in permitting the Puget Sound Traction, Light & Power Company to abolish the 4-cent fare in Seattle, has been upheld by Judge John R. Mitchell of the Thurston County Superior Court, who has dismissed the complaint of the city of Seattle against the commission's order. Corporation Counsel Hugh M. Caldwell has advised the City Council that he will immediately give notice of appeal to the State Supreme Court.

WHAT THE COURT HELD

The city contended that because the sale of 4-cent commutation tickets is required by the company's franchise, granted by the city of Seattle, the Public Service Commission has not the power to authorize the discontinuance of such tickets and that, even if the commission had the power, it was not warranted in doing so under the proof. In handing down his decision, Judge Mitchell said:

"This is clearly a case in which the State is exercising its general police power. I take it to be generally settled that the police power of the State is superior to and independent of the written law, whether constitutional or legislative, a thing that cannot be bartered away, that the State cannot divest itself of, and that once having delegated that power, it may again assume it and exercise it through legislative enactment. I think there is no doubt of the power of the Public Service Commission to dismiss a protest against that action of a common carrier by which it has, according to the plan and schedule of the law, filed a supplemental passenger tariff increasing its rates, deemed reasonable by the commission.

"On the proposition that the proof in the case does not justify the order, little need be said. The proof was ample if convincing to the commission, and clearly it was. The

findings and conclusions of the commission as to the facts are invested with the presumption of verity, and no court would undertake to disturb them in this case."

THE CITY ATTORNEY OBJECTS

Mr. Caldwell asserts that the opinion "makes no mention of the contention of the city that the express provision of the public service law relative to commutation tickets withholds from the commission the power to eliminate the 4-cent commutation ticket." He further says:

"In other words, the court holds that, no matter how biased a commission may be, if the evidence, no matter what its character, convinces the commission, the court will not interfere. Also that the commission may substitute some haphazard assumption of value in place of the one contemplated by the statute. We are unable to believe that this is the law, and will accordingly appeal from Judge Mitchell's decision to the Supreme Court."

Progress on Indianapolis Fare Case

A Complete Inventory of the Property of the Indianapolis Traction & Terminal Company Required by Indiana Commission

In connection with the petition of the Indianapolis Traction & Terminal Company for a straight 5-cent fare on its lines in the city of Indianapolis, filed with the Public Service Commission of Indiana on Nov. 15, the commission on Nov. 17 issued an order to the company instructing it to file, before Dec. 19, a detailed inventory of all of its property. A copy of the petition filed with the Public Service Commission, asking permission to abrogate that part of its franchise relating to fares and that it be permitted to charge a uniform 5-cent fare, retaining the usual transfer privileges, has been forwarded by the commission to the city of Indianapolis.

On Nov. 19 the City Council of Indianapolis adopted resolutions appealing to the Public Service Commission of Indiana to refuse to grant the petition for a 5-cent fare filed by the Indianapolis Traction & Terminal Company, and also the petition of the Union Traction Company of Indiana asking permission to charge a fare of 7 cents on the Indianapolis-Broad Ripple line for passengers riding north of Fairfield Avenue, which is the point of connection between the tracks of the Union Traction Company and the Indianapolis Traction & Terminal Company.

Hearing Nov. 30 on Class Rates

Eight Interurban Roads in Indiana Seek 15 Per Cent Increase in Class and Commodity Freight Rates

A consolidated hearing on petitions filed by eight interurban electric railways operating in Indiana for an increase of 15 per cent in class and commodity freight rates will be held before the Public Service Commission on Nov. 30. The petitioners are the Terre Haute, Indianapolis & Eastern Traction Company, Ohio Electric Railway, Union Traction Company of Indiana, Fort Wayne and Northern Indiana Traction Company, Fort Wayne & Decatur Traction Company, Chicago, South Bend & Northern Indiana Traction Company, Southern Michigan Railway and the Indianapolis & Cincinnati Traction Company.

A notice sent out by the commission on Nov. 20 said:

"This is regarded as one of the most important matters now pending before the commission. The first petition was filed by the Terre Haute, Indianapolis & Eastern Traction Company on Sept. 29. The commission wrote the company that the installation of the proposed schedule by the steam railroads was then under investigation and that pending decision in the steam railroad case nothing would be done about electric rates. The final hearing on the 15 per cent petition of steam roads was concluded last week and this matter is now awaiting determination. In the hearing of the petitions of the electric railroads, the commission affords opportunity for full representation by all interested parties who may appear in person or by counsel."

Women on New York Lines

Interborough and New York Railways Prepared to Receive Applications from the Fair Sex

Theodore P. Shonts, president of the Interborough Rapid Transit Company and of the New York (N. Y.) Railways, announced on Nov. 21 that, as a war measure, the companies would receive applications from women for places as station employees on the subway and elevated lines and as conductors on the surface cars. Preference will be given to dependent women relatives of employees now in the army and navy. The pay will be the same as that for men. While it will not be the policy of the Interborough Rapid Transit Company to replace men now employed with women, vacancies in station employees, as they occurred, will be filled with women. Applicants must be between twenty-one and forty-five years old. As for the surface lines, the women conductors will be placed on the pay-as-you-enter cars. In a statement which he issued to the employees, Mr. Shonts said:

PRESIDENT SHONTS' STATEMENT

"The vigorous prosecution of the war by our soldiers and sailors at the front is largely dependent upon the successful carrying on of the nation's industries. The maintenance of an adequate service on the elevated and subway lines of this company is indispensable to the welfare of the city of New York, and to a large degree the effective co-operation of this city with the government at Washington is dependent upon the city's transportation service.

"You who in such large numbers have joined the army or the navy will realize that the work which you formerly performed here, until your return, must be undertaken by others. You probably know that in many of the other countries engaged in this war it has been found necessary to afford to women the opportunity during the war of taking up those duties in civil life which they can perform and which were formerly intrusted to men. This country soon must follow a similar plan if its full strength in the war is to be exerted."

Equipment Used to Better Advantage

General Electric Representatives Show Bay State Men How to Get Most Out of Equipment

Representatives of the General Electric Company have held a series of meetings at Fall River, Brockton, Lawrence and Lynn among the employees of the Bay State Street Railway. Talks on salesmanship and service were made by Charles C. Peirce of the General Electric Company, and special instructions in the efficient use of power and the air brake were given by J. C. Thirlwall and Mr. Queeney of the same company. More than 300 men received instruction at the hands of the General Electric experts. The work will now be carried on by Mr. Huff and thirteen operating motormen. These motormen will not be taken off their regular runs, but whenever a new man is hired they will give him the instruction he needs. R. B. Stearns, first vice-president of the company, in a statement to the men recently on the results obtained, said in part:

"Motormen who received this special instruction found that they could get much better results. One motorman on the Lawrence-Salem line who was five minutes late and who would be much later when he arrived at his destination turned to Mr. Huff, and asked him to take the car. Mr. Huff, using the ideas suggested by the General Electric experts, not only made up the five minutes but brought the car in on time.

"This is only one example. You can see that cars that run on schedule time will give much better service to the public, eliminate waste, and save many thousands of dollars in the course of a year.

"What will you get out of this? That is a logical question. This saving will mean that there will be more money for the company to distribute in wages. You can see clearly that every dollar you save and every extra dollar you earn for the company is a dollar from which you can get your share. But it is equally true that every dollar you waste and every dollar you fail to earn is a dollar from which you cannot possibly expect to get anything."

Fare Increase Likely in Cleveland

The Cleveland (Ohio) Railway is arranging for an increase of fare after Jan. 1 and has ordered tickets for use when that time arrives. The financial statement of the company indicates that a rate of 4 cents cash or three tickets for 10 cents, with a charge of 1 cent for transfer, without rebate, will be necessary. The need of this change will be especially urgent if the motormen and conductors receive an increase in wages. The offer of an increase of 5 cents an hour from Nov. 1 to May 1, 1919, has been rejected by the men, but it is almost certain that they will bring the matter up in some other shape and further negotiations will be necessary.

The proposed increase in the rate of fare would add about \$840,000 a year to the income of the company. The interest fund is now \$326,000, but it seems likely that it will drop below the required \$300,000 before Jan. 1. This is the zero point on the fare barometer, and when the fund reaches the minimum, the rate of fare increases automatically under the Tayler franchise.

Hearing on Milwaukee Fares

Hearings on the application of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., to increase electric railway fares were held in Milwaukee on Nov. 7 and 8 and in Madison on Nov. 15 and 16. These hearings were devoted entirely to the examination of the commission's engineers as to the basis and details of their valuation of \$37,319,782 on the properties of the Milwaukee Electric Railway & Light Company and Milwaukee Light, Heat & Traction Company as at Jan. 1, 1914. This phase of the inquiry has now been concluded. Hearings are to be resumed on Dec. 3 and continued until all evidence has been presented. No serious criticism was presented at these hearings by the cities and municipalities represented, as to the conclusions reached by the engineers of the commission. In fact, all the testimony tended to show that the unit prices assumed were, if anything, too low.

Jitney a Menace in Dallas

The jitney situation in Dallas, Tex., has reached a point where action of some kind is demanded, according to city officials and the public generally. Since the two regulatory ordinances passed by the city have been rendered non-effective through court action initiated by the Jitney Drivers' Association, the jitneys have been operating at will and unrestrained.

The jitney question has arisen in connection with the plans of the Dallas Railway for improvements under the agreement in the new service-at-cost franchise. The railway has submitted an outline of proposed improvements, and has intimated that the jitney question must be settled before many of these improvements can be carried out.

In discussing the situation, William Doran, commissioner of streets, said:

"I am in favor of putting the jitneys out of business because I believe they are a detriment to the growth of Dallas. They are run recklessly and rapidly, and cause danger to all who ride in them and to all who are on the streets when they pass. Especially do I condemn the privilege of permitting them to operate on streets where electric railways are located. I believe the City Commission can regulate them by prohibiting their operation on streets having electric railway tracks."

The cases now on appeal in the Court of Civil Appeals at Dallas involving the validity of the regulatory jitney ordinances have been advanced and decisions are expected soon. When these cases are out of the way, action by the City Commission looking to the elimination of the jitneys in Dallas can be expected.

The jitney case styled Henry D. Lindsey, Mayor, et al vs. the Dallas Consolidated Electric Street Railway, in which the electric railway sought an injunction to restrain the city officials from enforcing the initiated jitney ordinance adopted on the face of the returns in the recent primaries, was argued on submission to the Court of Civil Appeals during the week ended Nov. 3.

Sleepers on North Shore Road.—The Chicago, North Shore & Milwaukee Railroad, Highwood, Ill., will place a sleeper in service between Chicago and Milwaukee, leaving each city at 10 p. m. Patrons will be allowed to remain in their berths until 7 o'clock the next morning.

Higher Fare in Muscatine.—Announcement has been made by the Tri-City Railway of the discontinuance of the use of six tickets for a quarter in Muscatine, Iowa. The six-tickets-for-a-quarter fare was a voluntary concession made to the residents through the courtesy of the road.

Car-to-Car Transfers in Des Moines.—In an effort to relieve the congestion during work hours which has for several months been acute in Des Moines, Iowa, the Des Moines City Railway is putting car-to-car transfers into effect on four of its lines which duplicate each other for considerable distances.

Application for Increased Fare on Kansas-Missouri Line.—The Joplin & Pittsburg Electric Railway, Pittsburg, Kan., which operates in Kansas and Missouri, has applied to the Public Service Commission of Missouri for authority to increase its passenger rates from 1.93 cents per mile to 2½ cents per mile.

New Joint Passenger Rates Filed.—The Lehigh Valley Transit Company and the Philadelphia & Western Railway, Upper Darby, Pa., have filed joint passenger tariffs with the Public Service Commission of Pennsylvania, effective on Dec. 1, which cancel the limited service rates to Center Square, North Wales, Washington Square and West Point.

One-Man Cars on Iowa Line.—One-man cars have been placed in service by the Fort Dodge, Des Moines & Southern Railroad on its local lines in Fort Dodge, Iowa. As the register now in use collects only coin and the company formerly used tickets it is necessary for the present for the motorman to collect tickets as the passengers enter the car.

Increase in Jitney Fares in Richmond, Va.—An agreement has been signed by a number of jitney drivers in Richmond, Va., raising the fare from 5 cents to 7 cents. The increase in the cost of gasoline, tires and automobile accessories is the reason given for the higher fare. The jitney drivers who refused to sign the agreement say that they are convinced that the public will not pay 7 cents. The results so far seem to bear them out in their contention.

Electric Railway Opposes Bus Service.—In an answer filed by the Springfield (Ill.) Consolidated Railway with the Public Utilities Commission of Illinois opposing the granting of a certificate of convenience and necessity to the Springfield Motor Bus Company, the officials of the railway declare there is no necessity for additional common carriers in Springfield. They deny the charge made by the promoters of the Motor Bus Company that the railway cannot take care of the traffic and that transportation on the cars is unsafe.

One-Man Cars for the Worcester-Warren Line.—The Worcester & Warren Street Railway, of which E. W. Holst, Boston, is consulting engineer in charge of operation, has been authorized by the Public Service Commission of Massachusetts to operate one-man cars over its line. The type approved is of double-end single-truck design, weighing complete about 13,500 lb. and built by the St. Louis Car Company. It has cross seats and a seating capacity of thirty-three passengers, with automatically controlled sander, brakes and doors, 24-in. wheels, an 8-ft. wheelbase, two G.E. 25.8 motors and K-10-A control.

Increase in Fare Granted in Rutland.—The Public Service Commission of Vermont has approved the application of the Rutland Railway, Light & Power Company for an increase in its electric railway fares from 5 cents to 6 cents for each zone. This will result in an increase of approximately \$25,000 a year in gross revenue. A hearing was held in Rutland on Nov. 1 by the commission on the petition of the company for permission to increase its fare. Figures were presented to show that the increase in cost of operation in the last few years and the rise in the prices of materials and higher wages made it necessary to charge passengers more for transportation if a reasonable income was to be derived. Valuation figures were also submitted.

Personal Mention

Roger Mills, superintendent of the Sioux Falls (S. D.) Traction System, has been appointed manager of the company.

John Gibson, master mechanic of the Sioux Falls (S. D.) Traction System, has been promoted to the position of superintendent of the company.

E. A. Fox has been appointed superintendent of electrical distribution of the Charleston Consolidated Railway & Lighting Company, Charleston, S. C.

Edward Coy has been appointed engineer maintenance of way in charge of track, bridges and buildings, for the Chicago, Ottawa & Peoria Railway, Ottawa, Ill.

H. A. Ritter has been appointed master mechanic of the Sioux Falls (S. D.) Traction System. He was formerly connected with the Gary & Interurban Railway, Gary, Ind.

Roy C. Green has resigned as assistant superintendent of the accident department of the Cleveland (Ohio) Railway to become connected with Squire, Sanders & Dempsey, counsel for the railway.

J. G. Felton, electrical engineer of the Charleston Consolidated Railway & Lighting Company, Charleston, S. C., has been appointed engineer of the gas and electrical department of the company.

G. H. Kelsay, superintendent of power of the Union Traction Company of Indiana, Anderson, Ind., has been made electrical engineer in charge of overhead lines, lighting and power circuits and substations.

Homer B. Fisher, former fire marshal of the city of Dallas, Tex., and well known in real estate circles in that city, has been appointed as assistant to Richard Meriwether, general manager of the Dallas Railway.

E. E. Jones has been appointed superintendent of power plant of the Union Traction Company of Indiana, Anderson, Ind. He will have charge of the power stations at Anderson, Newcastle, Winchester, Eaton and Portland, Ind.

A. C. Bradley, superintendent of the northern division of the Pacific Electric Railway, Los Angeles, has also been appointed superintendent of the eastern division of the company to succeed M. P. Groftholdt, the two divisions being consolidated.

F. J. H. Kracke will be appointed by Governor Whitman to the Public Service Commission for the First District of New York to succeed Henry W. Hodge, now in government service. Mr. Kracke is commissioner of plant and structures for the city of New York.

F. P. Dickson, a member of the board of directors of the Kansas City (Mo.) Interurban Freight Terminal Company, has been president of the Kansas City, Lawrence & Topeka Railway since the company was organized ten years ago. Mr. Dickson had previously been in steam road work, and before that had been a coal operator.

Geoffrey Porter has resigned as chief electrical engineer of the British Columbia Electric Railway Company, Ltd., Vancouver, B. C. Mr. Porter intends to take up private practice as advising and contracting engineer, but in the meantime will visit Japan. The company does not intend to appoint a successor to Mr. Porter at present.

M. J. Perrin has been appointed manager of transportation of the San Diego (Cal.) Electric Railway, Point Loma Railroad and San Diego & Coronado Ferry Company. The position of superintendent has been abolished. All departments which have heretofore reported to the superintendent will hereafter report to the manager of transportation.

Charles Bulkley Hubbell will be appointed by Governor Whitman to the Public Service Commission for the First District of New York to succeed William Haywood, now in government service. Mr. Hubbell is a New York City attorney. He was formerly president of the city Board of Education and is a member of Governor Whitman's commission in charge of the building of the new prison at Sing Sing.

Clyde E. Barnes, mechanical engineer of the Spokane & Seattle Railway, which controls the Spokane & Inland Empire Railroad, the Oregon Electric Railway, the Pacific & Eastern Railway, the United Railways and the Oregon Trunk Railway, has enlisted in the United States Navy and has gone to the Philadelphia Navy Yard to qualify for service in the naval patrol.

Leslie R. Coffin, manager of the Whatcom County division of the Puget Sound Traction, Light & Power Company since 1910, with headquarters at Bellingham, Wash., has been ordered to report for duty at the American International Corporation's office in Philadelphia, Pa., in which company officers of Stone & Webster are interested. Mr. Coffin's temporary successor at Bellingham will be J. C. Hector, assistant treasurer of the company in that city.

P. D. Kline, who designed, constructed and placed in operation the Ogden, Logan & Idaho Railway, was its general manager for five years, and then accepted on May 1 the position of manager of the La Crosse district of the Wisconsin-Minnesota Light & Power Company, on Nov. 15 was elected vice-president and general manager of the Wisconsin-Minnesota Light & Power Company with headquarters at Eau Claire, Wis., succeeding A. E. Peirce, who has accepted service as an officer in the army.

George E. Erb, Lewiston, Idaho, has been appointed to the Public Utilities Commission of the State by Governor Alexander. Mr. Erb succeeds Axel P. Ramstedt, who resigned almost a year ago to take a position as comptroller with the Day mining interest. Mr. Ramstedt was president of the commission and his term of office had expired. John W. Graham, Twin Falls, succeeded him as president of the commission. Mr. Erb will take up his duties on the commission about Dec. 1. He is a Democrat and has been active in the public and party affairs in northern Idaho for years. He is the owner of a chain of hardware stores.

Sir Albert H. Stanley is reported to be on his way to the United States on a war mission for Great Britain as president of the Board of Trade in the cabinet of Premier Lloyd George. Sir Albert was long connected with the Detroit (Mich.) City Railway, now a part of the Detroit United Railway, becoming its general superintendent. He left Detroit in 1903, joining the staff of the Public Service Corporation of New Jersey, and five years later was appointed general manager of the Underground Electric Railways of London, England. Later he became managing director of that corporation and its allied interests. Sir Albert was knighted in 1914.

H. K. Bennett, long connected with the Fitchburg & Leominster Street Railway at Fitchburg, Mass., has been appointed superintendent of employment of the Bay State Street Railway, Boston.

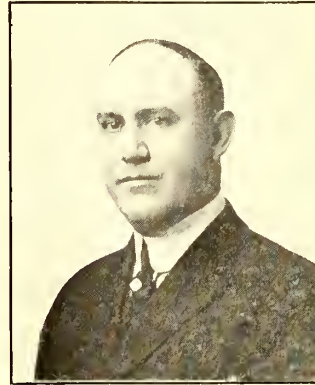
Mr. Bennett was born in Whitehall, N. Y., in 1871. He lived in Fitchburg, Mass., for thirty-nine years and was educated there and was graduated from Boston University. He took up newspaper work in Fitchburg in 1891. In 1898 he entered the employ of the Fitchburg & Leominster Street Railway as car-house foreman and dispatcher. He held this position for six years, when he was placed in charge of the claim department, publicity and advertising. Mr. Bennett was a member of the



H. K. BENNETT

Common Council of Fitchburg for the five years ended Jan. 1, 1911, and during his last year he served also as president of the Council. He was made third vice-president of the American Electric Railway Claim Agents' Association in 1909 and first vice-president in 1910. In 1911 he was elected president of the association. Mr. Bennett's newspaper training has stood him in good stead as a contributor of papers before the association and to the technical press.

Richard Meriwether, superintendent and general manager of the Dallas (Tex.) Railway, controlling the recently consolidated electric railways in that city, was born in Frankfort, Ky., in 1875. He lived in Louisville, Ky., up to the time he left for college.



RICHARD MERIWETHER

He was graduated from Rose Polytechnic Institute at Terre Haute, Ind., in electrical engineering in 1896, and was successively in the mechanical department of the Southern Railway, the Siemens-Halske Electric Company, Chicago, and the Western Electric Company, Chicago. He accepted a position with the Louisville (Ky.) Railway in 1903 as assistant to the superintendent of power, having charge of all transmission lines. In 1906 he became connected with the Louisville & Eastern Railway, running from Louisville to Beard Station, Ky. For several years Mr. Meriwether was mechanical superintendent of this line and in addition had charge of the construction of a line from Beard Station to LaGrange, and also a line from Louisville to Shelbyville. In 1909 he was appointed general superintendent of the Louisville & Eastern Railway, in charge of all operation and construction, and continued in that capacity until 1911, when he accepted a position with Stone & Webster as general superintendent of the Dallas (Tex.) Consolidated Electric Street Railway. This position he held up to the time of the consolidation of all the electric railways in Dallas under localized management as the Dallas Railway. Mr. Meriwether then accepted the position of superintendent and general manager of the new company.

B. M. Warner, who has filled the position of general superintendent of the various Spreckels companies at San Diego, Cal., including the San Diego Electric Company, the San Diego & Southeastern Railway and the Point Loma Railroad, has been appointed chairman of the board of economics which has recently been created to handle important matters pertaining to the operation, maintenance, construction, etc., of the companies. Mr. Warner has also been appointed manager of the Coronado Beach Company, the Coronado Water Company and the United Light, Fuel & Power Company. He will have jurisdiction over the following departments: Engineering, hotel power plant, tent city and miscellaneous interests now under the superintendent's department. His jurisdiction will also extend over all departments of the Coronado Water Company and the United Light, Fuel & Power Company.

Obituary

M. L. Scudder, former president of the Lincoln (Neb.) Traction Company and a large stockholder in the company, died at his home in New York City on Oct. 29.

Charles F. Hutchings, who for many years had been the legal adviser of the Kansas City Western Railway, died at his home in Kansas City on Nov. 10, at the age of seventy-one years. He is survived by a widow and three children.

Robert M. Gallaway, former president of the Merchants' National Bank, New York, died at his home in New York on Nov. 13. Mr. Gallaway was for many years president of the Atlantic Dock Iron Works. When that company was dissolved in 1887 he became president of the New York Mutual Gas Light Company. Mr. Gallaway lived in France two or three years, but returned to this country and took an active interest in the affairs of the Northern Pacific Railroad. Later he became associated with Jay Gould and was made vice-president of the Manhattan Elevated Railway, New York, which position he held until 1891, when he became president of the Merchants' National Bank. At the time of his death Mr. Gallaway was a director of the Manhattan Railway.

Construction News

Construction News Notes are classified under each heading alphabetically by States.

An asterisk (*) indicates a project not previously reported.

RECENT INCORPORATION

*Alamance Railway, Burlington, N. C.—Incorporated to construct and operate electric, steam or other railways to connect Burlington, Graham, Haw River, Hopedale, Carolina and Glencoe. Capital stock, \$60,000. Incorporators: George W. Hatch and F. E. Cox, Burlington, and J. H. Bridgers, Henderson, N. C.

FRANCHISES

*Grove, Ill.—The Grove & Morton Railway has asked the Public Utilities Commission of Illinois for a certificate of convenience and necessity to construct and operate a line between Grove and Morton.

Springfield, Ill.—The Public Utilities Commission of Illinois has dismissed the petition of the Chicago, Springfield & Cairo Railway for a certificate of convenience and necessity, authorizing it to construct a line from Springfield to Cairo. It was shown that the company did not spend 25 per cent of its capitalization within the first five years after its incorporation, as required by law. J. B. Campbell, president. [May 26, '17.]

Springfield, Ill.—The Public Utilities Commission of Illinois has dismissed the petition of the Springfield-Carbondale Railroad for a certificate of convenience and necessity to construct its proposed line from Springfield to Carbondale. The company failed to begin building operations. C. H. Forrester, Chicago, president. [April 14, '17.]

Manitowoc, Wis.—The Wisconsin Public Service Company has received a franchise from the City Council to supply electricity in Manitowoc.

TRACK AND ROADWAY

Pacific Electric Railway, Los Angeles, Cal.—It is reported that the Pacific Electric Railway contemplates the construction of an extension from Santa Ana to San Diego.

San Francisco, Napa & Calistoga Railway, Napa, Cal.—This company reports that it has just completed the construction of a three-span 90-ft. bridge, using 27-in. I-beams with cover plates on four 45-deg. skew concrete piers 16 ft. high.

Municipal Railways, San Francisco, Cal.—A contract has been awarded to H. S. Tuttle for installing electric conductors and appurtenances for the Market Street line of the Municipal Railway of San Francisco.

Jacksonville (Fla.) Traction Company.—Work will be begun at once by the Jacksonville Traction Company on the construction of an extension to the State Fair grounds.

Pensacola (Fla.) Electric Company.—Improvements that will cost in excess of \$75,000, and which include moving the tracks of the Bayshore line farther away from the beach, have been authorized by the Pensacola Electric Company. The removal of the tracks has become necessary owing to fact that each year for several years storms have washed up the tracks and demolished trestles, causing a big annual outlay in making repairs. The plans are to start at about Palmetto Beach and build the new car line around behind the settlement at Big Bayou. A trestle about 12 ft. above normal tide will be constructed and the line from that point on to the navy yard will be so far from the bay that there will be no danger of damage during storms.

St. Petersburg-Tampa Railway, St. Petersburg, Fla.—All preliminary work has been completed by the St. Petersburg-Tampa Railway for the construction of its proposed line from St. Petersburg to Tampa and work will be begun as soon as the government grants a permit for the construction of a bridge across Old Tampa Bay. George S. Gandy, Sr., St. Petersburg, president. [Sept. 22, '17.]

Georgia Railway & Power Company, Atlanta, Ga.—Work will be begun at once by the Georgia Railway & Power Company on the reconstruction of all its curves, switches and tracks on Peachtree Street between Edgewood Avenue and Ellis Street.

Savannah (Ga.) Electric Company.—This company reports that it will construct about 3000 ft. of track on Abercorn and on Fifty-fourth Streets.

Chicago, Milwaukee & St. Paul Railway, Chicago, Ill.—A thirty-two lever mechanical interlocking plant has been ordered by the Chicago, Milwaukee & St. Paul Railway from the Federal Signal Company, Albany, N. Y., to be installed at Drummond, Mont.

Gary & Interurban Railroad, Gary, Ind.—It is reported that the Gary & Interurban Railroad plans to improve its line in Gary.

Wichita Railroad & Light Company, Wichita, Kan.—Work will be begun at once by the Wichita Railroad & Light Company on the construction of its extension to the Orient shops.

Frankfort & Shelbyville Electric Traction Company, Shelbyville, Ky.—Col. Charles E. Hoge, Frankfort, Ky., has been elected president of the Frankfort & Shelbyville Electric Railway, formed to build a line from Shelbyville to Frankfort, Ky. P. C. Phillip, Philadelphia, promoter of the company, has been elected vice-president and general manager, and F. W. Henkel, Chicago, secretary and treasurer. Directors for the first year are J. Sweigert Taylor and Eli H. Brown, Jr., Frankfort, D. B. G. Ross, Louisville, F. W. Henkel and P. C. Phillip. The company is proceeding with the details of the preliminary operation and is collecting the signatures to the deeds of the right-of-way. It had been the intention of the company to continue the line of the wide-gage Louisville & Interurban Railway from Shelbyville to Frankfort, where it would connect with the standard-gage line of the Kentucky Traction & Terminal Company, but this decision is now open again, and a standard-gage line may be built. [Oct. 27, '17.]

Portland, Me.—The Public Utilities Commission of Maine on Nov. 8 ordered the physical connection of the steam and electric railway tracks in Portland, the work to be completed by Jan. 1, 1918. The cost will be met 75 per cent by the steam roads and 25 per cent by the electric roads.

Bay State Street Railway, Boston, Mass.—Work has been begun by the Bay State Street Railway on the widening of Washington Street, Quincy, and the construction of a loop in the principal square, in co-operation with the War Department, the City Council of Quincy and the Fore River Shipbuilding Company. The work will cost about \$175,000, of which about \$80,000 will be for land damages. Four hundred tons of steel rails, 500,000 paving blocks, seven carloads of cement, 5000 cu. yd. of filling material, 48,000 bolts, 3000 tie-rods, 450 joints, 1000 copper bonds, a new pole line and 1½ miles of trolley wire will be put in place. A large amount of the material is on hand. The work is directed by Mayor Whiten, R. B. Stearns, vice-president of the Bay State Street Railway, and H. G. Smith, general manager of the Fore River Shipbuilding Company.

Escanaba (Mich.) Traction Company.—As soon as rails can be secured the Escanaba Traction Company will double-track its Stephenson Avenue line from Ludington Street to Hartnett Avenue.

Trenton & Mercer County Traction Company, Trenton, N. J.—Work will be begun at once by the Trenton & Mercer County Traction Company on the reconstruction of its tracks on South Broad Street between Liberty Street and the city line.

New York & Long Island Traction Company, Hempstead, N. Y.—The Public Service Commission for the First District of New York has announced the withdrawal by the New York & Long Island Traction Company of a petition requesting permission to abandon two unbuilt transit lines which are included in the company's franchise. One of these lines was to extend down to Rockaway Road, from Jamaica Avenue to Three Mile Mill Road, where the line would join the company's present line between Brooklyn and Freeport. The other was to extend through South Street, from Washington Street, Jamaica, to Hollis Avenue, Queens. Because

of the high cost of labor and materials at this time, it is not planned to compel the company at present to build these proposed lines, which would be a boon to sections now without trolley service to Jamaica except by round-about routes. As soon as conditions are favorable, however, application will be made to the Public Service Commission for the construction of the lines.

Interborough Rapid Transit Company, New York, N. Y.—In view of the refusal of the Interborough Rapid Transit Company to undertake the operation of a rapid transit service over the tracks of the Long Island Railroad to Little Neck and Whitestone, which the city proposed to lease as an extension of the Corona line, the Public Service Commission for the First District of New York has directed its chief engineer and chief of rapid transit to proceed with the preparation of plans and form of contract for the construction of an extension of the Corona line which now terminates at Alburty Avenue, Corona, to Main Street, Flushing.

Long Island Railroad, New York, N. Y.—A thirty-two-lever Saxby & Farmer interlocking machine has been ordered by the Long Island Railroad from the General Railway Signal Company, Rochester, N. Y., for installation at Far Rockaway, L. I.

Cincinnati (Ohio) Traction Company.—Announcement has been made by the Cincinnati Traction Company that it will construct a new line to Price Hill.

Tulsa (Okla.) Street Railway.—The Hodge Street line of the Tulsa Street Railway has been double-tracked from Rockford to Lewis Avenue. The company will double-track its North Main Street line from Main and Cameron Streets to the Katy turnout on North Cheyenne Street. This will greatly facilitate the handling of traffic on the north and south line.

Port Arthur (Ont.) Civic Railway.—A contract has been awarded by the Port Arthur Civic Railway to Stewart McKenzie of Fort William, Ont., for the erection of timber bridges over McIntyre River on its main line.

Johnstown, Pa.—The Public Service Commission of Pennsylvania has approved the plans of the Johnstown Traction Company for extending its line through the Seventeenth Ward to Constable Hollow. It is expected that work will be begun on the line in the spring.

Dallas (Tex.) Northwestern Traction Company.—E. P. Turner, president of the Dallas Northwestern Traction Company, has announced that actual construction work will begin within the next few days on the Denton-Krum section of the line being built out of Dallas. Bids for grading have already been received. [Oct. 20, '17.]

Dallas (Tex.) Railway.—R. Meriwether, general manager of the Dallas Railway, operating the consolidated electric railways of Dallas, Tex., under the recently granted service-at-cost franchise, has outlined improvements proposed under the terms of the franchise requiring the expenditure of \$400,000 in betterments and extensions, and has asked the approval of the city authorities for the improvements. Three new car lines will be established, and tracks on two streets will be eliminated. The tracks on Exposition Avenue between Fair Park and Gaston Park will be eliminated, and the tracks on South Austin Street between Commerce and Cadiz Streets will be taken up. The present Second Avenue line will be extended from Forest Avenue to the city limits, a distance of about 1 mile. A new line will be constructed from South Lamar Street to Akard Street on Cadiz. The South Belt line that now runs on Austin Street will be eliminated. The Harwood line, which now has its terminus on Grand Avenue, will be extended to Forest Avenue. Further reference to the proposed improvements was made in the *ELECTRIC RAILWAY JOURNAL* of Nov. 17, page 914.

Texas Electric Railway, Dallas, Tex.—Rails and ties have been placed on the ground by the Texas Electric Railway for an extension of its Gray's Hill line in Sherman to the Sherman Hospital, as authorized under a recently granted franchise. Shortage of labor is delaying the work. The company has begun the work of installing ornamental steel trolley poles along its lines within the city of Sherman, taking the place of the wooden trolley poles that have been

in use since the lines were built. The new ornamental steel poles are 30 ft. high.

Seattle (Wash.) Municipal Railway.—The bond issue of \$40,000 which is required for the extension of the Seattle Municipal Railway to Leary Avenue and Market Street, Ballard, has been oversubscribed by the people of Seattle.

West Virginia Traction & Electric Company, Wheeling, W. Va.—The city of Wheeling and the West Virginia Traction & Electric Company plan to build two reinforced concrete bridges over Wheeling Creek at a cost of about \$70,000.

SHOPS AND BUILDINGS

Chicago, North Shore & Milwaukee Railroad, Highwood, Ill.—It has been reported in Chicago and Milwaukee papers that the Chicago, North Shore & Milwaukee Railroad had completed plans for the erection of a new terminal in the downtown district of Milwaukee. These reports are unfounded. While the company has acquired property in Milwaukee for use as a general merchandising and express terminal, and has erected necessary buildings which have been in use for several months, it has no plans at the present time for the erection of a new terminal in Milwaukee.

Fort Wayne & Decatur Traction Company, Decatur, Ind.—A contract has been awarded to Charles N. Christen by the Fort Wayne & Decatur Traction Company for the erection of a new passenger station on Jackson Street, Decatur. The structure will be 20 ft. x 50 ft., one story high, the walls to be of cement block and the floors of concrete.

Hagerstown & Frederick Railway, Frederick, Md.—A new carhouse is being built by this company on Summit Avenue, Hagerstown.

Long Island Railroad, New York, N. Y.—Fire recently damaged the carhouse of the Long Island Railroad at Locust Avenue, Jamaica, and destroyed one car. The damage to the carhouse is estimated at about \$2,000.

Oklahoma (Okla.) Railway.—Plans are being made by the Oklahoma Railway for the construction of a temporary freight station at Oklahoma City.

Sand Springs Railway, Tulsa, Okla.—This company reports that contracts will be placed at once for the construction of a new carhouse to cost approximately \$10,000.

Philadelphia, Pa.—Mayor Smith of Philadelphia has approved contracts with the Standard Construction Company, Philadelphia, for building two stations on the upper part of the Frankford Elevated Line for \$55,000 and \$53,000, respectively. Sealed proposals will be received by the Department of City Transit, William S. Twining, director, until 12 o'clock noon on Dec. 4, for the following work appurtenant to the Frankford Elevated Railway: Contract No. 539—Plumbing installation on station buildings at Orthodox-Margaret streets and at Ruan-Church streets. Contract No. 540—Electrical installations in station buildings at Orthodox-Margaret streets and at Ruan-Church streets. Copies of plans and specifications may be obtained upon deposit of \$10, to be refunded upon return of plans.

POWER HOUSES AND SUBSTATIONS

Northern Ohio Traction & Light Company, Akron, Ohio.—Plans have been completed by the Northern Ohio Traction & Light Company for the construction of a new power house, 25 ft. x 25 ft., at Midvale.

Sarnia (Ont.) Street Railway, Ltd.—A report from the Sarnia Street Railway states that it has purchased from the Canadian Westinghouse Company one 500-kw. rotary converter for the operation of its cars, to be delivered about the first of the year.

St. Albans & Swanton Traction Company, St. Albans, Vt.—This company reports that a contract will be awarded the Electric Storage Battery Company for the renewal of its battery at Swanton.

Eastern Wisconsin Electric Company, Sheboygan, Wis.—Plans have been completed by the Eastern Wisconsin Electric Company for the installation of a 500-hp. steam boiler in its power house at Rees and Main Streets, Fond du Lac. The boiler will be equipped with automatic stokers.

Wisconsin Valley Electric Company, Wausau, Wis.—An electric lighting plant will be built by the Wisconsin Valley Electric Company in Marathon.

Manufactures and Markets

Discussions of Market and Trade Conditions for the Manufacturer, Salesman and Purchasing Agent
 Rolling Stock Purchases Market Quotations Business Announcements

Pacific Coast Roads Are Developing Freight Business

High Prices and Slow Deliveries Are Encouraging Western Manufacture of Supplies—Prices Are Unchanged—Market Dull

The unfavorable turn of affairs in Russia and Italy has made everyone "hold his breath" as one Pacific Coast dealer put it, and this condition has very noticeably affected the electric railway field. Hesitation and uncertainty are evident in market and trade conditions. Western companies always did do more manufacturing in their own shops than is customary among Eastern railways and this tendency has become more general since prices have increased and deliveries lengthened. Of course the Eastern centers will always be depended upon for most manufactured supplies, but such items as trolley wheels, hangers, composition ears and clamps, for example, are now very generally made in the shops of Western companies.

Effective efforts are being made all along the coast to build up freight business. An inventory shows that twelve coast companies are giving increased attention to this phase of their business, and excellent results are reported. The most notable activity in this line is on the lines of the Pacific Electric Company in southern California. On this system interstate as well as local freight is accepted, and an extensive business is being built up. Several hundred freight cars are under construction at the Torrance shops of this company, these cars being made entirely in accord with standard practice. A feature of the electric railway freight service is the quick delivery it affords, which is particularly attractive to the farmer with produce to market. In addition to the freight business in agricultural districts, which has been built up extensively in southern California and some parts of the Northwest, there is also a field for larger consignments. For example, 300 cars of steel were very recently routed over the line of the Oakland, Antioch & Eastern.

Although the number of jitneys has fallen off materially this year, on account of strict regulation and other more attractive occupations for jitney drivers, this form of competition is still depleting electric railway incomes. Interurban jitneys seem to be increasing in popularity even on such long runs as San Francisco to Los Angeles, about 500 miles. Orders have recently been issued by the California Railroad Commission placing interurban jitneys and motor trucks on virtually the same basis as the steam and electric railways. This may deflect some freight business from the electric lines. Several important hearings before utility commissions for fare increases are under way. The use of female labor is being seriously considered by several roads who are facing labor problems.

There has been practically no change in prices recently and, because of slow movement, such stock shortages as there are have not been felt. In fact, there is such a wide variety of standards on the Western coast that it is very difficult to carry stocks in most lines and it is the custom to anticipate demands. Since the entry of this country into the war it has become apparent that even greater delays in deliveries must be expected. Railway companies have come to realize this and are protecting themselves by raising their minimum stock limits, thus affording a wider margin. It is now the feeling on the coast that no improvement in deliveries can be expected.

Deliveries on standard steel rails are quoted for late in 1918. No quotations are being made on girder rails or bolts. Tie plates and angle bars are in the same class with rails, but spikes are quoted for six to eight weeks' delivery at factory. Forged steel blanks for gears and pinions are

quoted for eleven months. No stocks are available. Stocks of railway motors and controllers are in good shape and delivery is quoted at five and a half to six months, which is three or four months better than on many lines in the railway supply field. However, there is no demand for motors at present.

Deliveries on seamless trolley poles are well over a year, but butt-welded poles can be had for shipment in six weeks. The recent heavy purchases of one-man cars on the coast has led to the prospect of considerable business in accessories for such cars and as these are for the most parts standard, stocks will probably be carried on the coast. Stocks of brushes are practically exhausted, and it is a problem to secure those for which orders come in, particularly if older types are specified. Stocks of insulators for overhead work are only fair and deliveries are rather slow. Stocks of porcelain for inside work, however, are very heavy.

Prevailing Conditions Favor Sale of Saving Devices

Necessity for Practising Economy in Every Direction Has Led to Greatly Increased Market—One Manufacturer Is Making Installment Deliveries

Unusual conditions which are prevalent to-day have left their stamp on the market for practically all economy devices. While little money will be expended on new projects and on extensions except where conditions or commissions actually demand, electric railway properties have not been slow to recognize that the expenditure of certain sums, usually small, in economy-increasing devices will shortly be repaid many fold by the savings thereby effected.

Operating costs have increased almost to the breaking point and, in no part is this more true than that pertaining to energy, where the company produces its own. When it is purchased under a long-time contract irrespective of the price of coal, of course this is not so true, but this is a rare condition. One of the most important methods of energy saving, of course, is in the proper manipulation of the controller, so it is not surprising that energy-checking devices on the car should be greatly in demand in these days of national economy. Hence, most large railway companies and many small ones are now studying the most effective way of checking the consumption.

The Railway Improvement Company reports that the pressure of demand has obliged the filling of orders in installments, as rapidly as manufacturing facilities will permit. Deliveries of coasting recorders are being made right along on this plan, so as partially to satisfy customers. While metal and other essentials entering into the construction of coasting time recorders have been arranged for the future, no one can tell when the output of the sheet steel mill may be commandeered by the government. It is held that since coasting recorders may be classed as necessary to transportation equipment, a certificate to supply the metal sheets may be granted by the federal board in charge of such matters and the requirements filled.

The Economy Electric Devices Company, Chicago, which handles the engineering and sales of the Sangamo Economy railway meter, is in fortunate position regarding deliveries. This company's energy-checking device consists of only a case, a resistance spool and a standard Sangamo D-5 watt-hour meter element and shunt. These elements are identical with those manufactured in large numbers for power station switchboards, for d.c. central station use, and for many other purposes. Therefore, the production is a part of the

regular steady output of the Sangamo Electric Company, which employs more than 1000 people in its meter manufacturing plant at Springfield, Ill. Sangamo Economy railway watt-hour meters are now being shipped to The Milwaukee Electric Railway & Light Company to complete an order for 350 meters now being installed in the city of Milwaukee. Deliveries of Economy meters can be made promptly.

The Arthur Power-Saving Recorder Company, New Haven, Conn., also reports that the market for power-saving recorders is good. Up to recently it has been making deliveries at from thirty to sixty days, but the company is now moving into larger quarters in order to take care of the development of its business, and in future expects to be in a position to make deliveries in shorter time than this.

Labor May Have Unpleasant Effect on Market

Higher Prices and Longer Periods for Deliveries Are Anticipated Unless the Situation Is Improved Shortly

Unless the threatening attitude of the factory workers—skilled and unskilled—is met in some way or other and definitely disposed of, manufacturers and sales representatives of railway supplies and accessories in the leading centers say still further advances in price and delays in shipments are to be expected. Though prices are generally accepted as being at the apex point now and will remain at this stage so long as even the most far-sighted men are able to gage the future, there is a bare possibility of still further changes. Should they occur, factory conditions in respect to labor will bring them about.

Considering the seriousness of the situation a supply house representative said as an illustration that he had occasion, within a short time, to buy parts of a transmission device. A year ago he paid 29 cents a foot; a few months later it had advanced to 50 cents, and at a more recent date he was obliged to pay 72 cents. He contended, from the nature of the goods, the increases were due entirely to a shortage of labor at the factory. Speaking further of delays in delivery he cited a case of a car building company in the Middle West that had a lot of new cars ready for shipment East. On account of the embargo the manufacturer was unable to get his product farther than Utica or Syracuse, the government deciding the cars were non-essentials in the war sense and therefore were not entitled to any shipping privileges, although they were badly needed to relieve railway congestion at certain points.

In point of volume the sale of railway supplies of divers kinds is reported to be in nowise discouraging, if the prevalent sentiment in all lines of business is taken into account. The most important orders for equipment come from railways running into or having connections with cantonments. The great trouble is getting raw material, with the deliveries at present slightly improved. Gears and pinions are in a better position, and orders can be put through when enough pressure and "steam" are behind them.

Co-operative Manufacturing

Two Manufacturers of Non-Competitive but Related Railway Products Operate Under Same Plant Roof Advantageously to Both

Economical production and distribution require that fixed charges be kept as low as is consistent with satisfactory output. Two manufacturers of non-competitive but somewhat related lines recently agreed to work together under the same plant roof. One, who produces a trolley specialty, compensates the other for the use of his establishment, saving some considerable outlay for machinery in a separate installation. The established house gets the benefit of a certain amount of additional revenue or rental and can fit in the production of the new specialty with its own work to advantage. The manufacturing load factor, in other words, is bettered.

The arrangement is one which is expected to give the specialty manufacturer more time to devote to field work and conceivably may lead to a more complete representation outside the plant than was formerly the case.

Local Orders to Local Manufacturers

Details of Situation that Arose When an Electric Railway Property Did Not Order Rolling Stock from Local Manufacturer

Other things being equal, the patronizing of local manufacturers is of mutual benefit both to utility companies and to producers of supplies and equipment. On a recent call at a large car-building plant it was learned that had the local electric railway company placed its latest car order with this concern instead of contracting with an outside builder, the owners of the plant would not have decided to give up car manufacture for the time being, but would have continued along former well-established lines. The plant is now in government service and might have been commandeered in any event, but a little more patronage by the local company would have prevented the voluntary stoppage of work along the lines for which the plant had become noted.

From the company's viewpoint it should be said that its management regarded it as its duty to procure the necessary rolling stock at the lowest cost consistent with the required quality. The operating organization felt that if an outside builder could furnish the cars most nearly in accordance with price and delivery requirements, the local plant must see that no injustice was done in going to its competitor. It was claimed that in this case other things were not equal, and that the best interests of the railway demanded placing the contract in a distant city. These points are of interest to the trade in their suggestion that in all cases where local manufacturers are in competition with outsiders decisions to place contracts should be based upon a comprehensive analysis of the competing tenders in all their aspects; that the award should be dependent not upon any single factor, but upon the predominance of advantages offered, taking the local railway company's operating problems, economic situation and relations with the public under detailed consideration.

Contradictory Conditions in Guy Anchor Market

Certain Distributors Pessimistic Owing to Unsatisfactory Position of Raw Materials, Others Place Hope in Government and Export Demand

With the situation in Guy anchors not altogether rosy in the view of several commentators, it is not entirely hopeless according to others. The former are inclined to rate the market on a par with everything else where malleable iron is the basic material. This applies to prices and deliveries, with the future rather hazy. Not being a stock proposition, factory readiness in material, producing capacity and definite shipping promises are vital considerations. The lack of new construction work is another reason offered why trade is not strong. Preparation in the way of additional strengthening and general repairing, in anticipation of the stress and strain incident to the winter storms, is almost normal.

On the other hand, an optimistic manufacturer of Guy anchors avers that trade is better than it has ever been. Deliveries are made within thirty days and prices are advancing, so much so that all quotations are subject to change without notice. A heavy shipment was recently made to France on the order of a private customer. The improvement in domestic buying is ascribed to meeting the extraordinary demand from the military cantonments. It is this new outlet and the export trade, which was never had before, that are swelling the volume of sales. The same optimistic authority may be quoted relative to the lessening of repair work, which is charged up to the high prices of the necessary material.

ROLLING STOCK

Saskatoon Municipal Railway, Saskatoon, Canada, has recently purchased one second-hand, single-truck car from the Ottawa (Canada) Electric Railway Company. It is undergoing repairs in the company's shop.

Third Avenue Railway, New York, N. Y., is reported as contemplating the introduction of two-car trains on the principal lines of its system, if the test trials prove satisfactory. Provision for them is yet to be made.

International Railway Company, Buffalo, N. Y., is receiving from the Russell Car & Snow Plow Company, Ridgway, Pa., four combination work cars and plows and three long single-truck rattan sweepers. Twenty-five of the original order for 100 new cars placed with the Kuhlman Car Company, Cleveland, Ohio, as mentioned in the ELECTRIC RAILWAY JOURNAL, Oct. 27, 1917, have been received by the International Company and put in operation. The remainder are arriving at the rate of two daily.

Columbia (Ga.) Railway, Gas & Electric Company is reported as having built five new cars in its own shops, which were enlarged and specially equipped for the purpose. Orders that were placed months ago for seven new cars have been delayed in shipment on account of the congestion at the manufacturer's, but will soon be in operation. The company's lines run into Camp Jackson, and the traffic has made extraordinary demands upon its equipment.

Brooklyn (N. Y.) Rapid Transit Company has under consideration, and is making inquiries, for the equipment of two car trains. Preliminary trials have been carried on for some time with a trailer, but it is now the intention to put in experimental operation two motor cars. The work of converting the cars, of the type known as 3000 and 3100, is to be carried out in the company's own shops. Four cars are to be rebuilt, and in addition to the old equipment the multiple control and the necessary air brakes must be installed.

TRADE NOTES

P. A. Stacy has recently been appointed manager of the Railway Roller Bearing Company, Syracuse, N. Y., to succeed Raymond H. Carhart.

D. M. Ferguson, formerly of the National Transit Company, has been appointed director of publicity for the American Steel Exports Company, Woolworth Building, New York.

R. L. Browne, who for the last fifteen years has been identified with electrical and mechanical engineering, has become associated with the sales department of the Goldschmidt Thermit Company in the capacity of commercial engineer.

General Electric Company, Schenectady, N. Y., announces that its repair shop at Atlanta, Ga., is fully equipped to give its customers repair service on all classes of direct and alternating-current apparatus. Correspondence should be addressed to the engineering department of the company, Third National Bank Building, Atlanta, Ga.

J. E. Lynch of the Page & Hill Company, Minneapolis, Minn., is at present acting as general superintendent of stores for the American International Shipbuilding Corporation, Philadelphia, Pa. He is on leave of absence from the Page & Hill Company and expects to resume his position in that organization as soon as his present duties are completed.

J. W. White, from 1906 to 1912 with the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., and from 1913 to 1916 with the Bullock Works of the Allis-Chalmers Company, Milwaukee, Wis., as special agency representative in charge of dealers and jobbers, has been made manager of the power and railway division of the Westinghouse Company at Detroit, Michigan.

Railway Utility Company, Chicago, Ill., manufacturer of the mercury thermostat for electrically regulating the heating current in electric cars, reports that it has purchased from the Thermo-Electric Regulator Company of Chicago all of its completed thermostatic equipments,

stock, dies, parts, etc., as well as an exclusive license to manufacture and sell thermostatic heat regulators under any and all patents now owned by the Thermo-Electric Regulator Company or which may be issued to it on applications pending.

Department of Commerce, Washington, D. C., has ready for distribution, at the rate of 15 cents a copy, "Customs Tariff of Chile," prepared and translated by L. Domartzky, tariff expert of the Bureau of Foreign and Domestic Commerce. The chief difference between the new tariff and the law of 1897, previously in force, is that of form; that is, the new rates, with one exception, are specific instead of ad valorem.

Exum M. Haas, formerly associate editor at Chicago for this paper and recently sales manager International Steel Tie Company, Cleveland, has resigned from the latter position to become sales engineer for the Austin Company, Cleveland, in charge of its railroad department. The Austin Company is one of the largest industrial engineering and building companies in the country and is well known in connection with its standard factory buildings, industrial plants and their equipment, and the construction of power houses and heating systems. It has recently entered the steam railroad field and it is in this direction that Mr. Haas' work will lie.

NEW ADVERTISING LITERATURE

Mitchell-Rand Manufacturing Company, New York, N. Y.: A folder—"Everything in Insulation"—containing a complete list of the company's insulating material, with prices and samples attached.

Good Roads Machinery Company, Inc., Kennett Square, Pa.: "Economy Snow Remover" is the title of bulletin K. D. S., with illustrations, now ready for distribution. The Remover, shown in action, serves the same purpose in moving snow as the wheeled and drag scraper does in handling dirt.

J. G. Brill Company, Philadelphia: *Brill Magazine* for October contains portrait and biography of Thomas A. Cross, president United Railways & Electric Company of Baltimore, and descriptions of the Springfield, Mass., electric railway system and of various recent cars built by the J. G. Brill Company and its associated companies.

NEW YORK METAL MARKET PRICES

	Nov. 12	Nov. 21
Prime Lake, cents per lb.....	23½	23½
Electrolytic, cents per lb.....	23½	23½
Copper wire base, cents per lb.....	31	31
Lead, cents per lb.....	6½	6½
Nickel, cents per lb.....	50	50
Spelter, cents per lb.....	8	8
Tin, Straits, cents per lb.....	73	77
Aluminum, 98 to 99 per cent, cents per lb.....	36	36

OLD METAL PRICES—NEW YORK

	Nov. 12	Nov. 21
Heavy copper, cents per lb.....	22	22
Light copper, cents per lb.....	19½	19½
Red brass, cents per lb.....	17½	17½
Yellow brass, cents per lb.....	15½	14½
Lead, heavy, cents per lb.....	4¾	4¾
Zinc, cents per lb.....	5¾	5¾
Steel car axles, Chicago, per net ton.....	\$41.00	\$41.00
Old carwheels, Chicago, per gross ton.....	\$28.75	\$31.00
Steel rails (scrap), Chicago, per gross ton.....	\$34.50	\$34.50
Steel rails (relaying), Chicago, per gross ton.....	\$55.00	\$55.00
Machine shop turnings, Chicago, per net ton.....	\$17.00	\$15.50

RAILWAY MATERIALS

	Nov. 12	Nov. 21
Rubber-covered wire base, New York, cents per lb.	32-35	32-35
Rails, heavy, Bessemer, Pittsburgh.....	\$38.00	\$38.00
Rails, heavy, O. H. Pittsburgh, per gross ton.....	\$40.00	\$40.00
Wire nails, Pittsburgh, per 100 lb.....	\$3.50	\$3.50
Railroad spikes, 9/16 in., Pittsburgh, per 100 lb..	\$5.50	\$5.50
Steel bars, Pittsburgh, per 100 lb.....	\$5.00	\$5.00
Sheet iron, black (24 gage), Pittsburgh, per 100 lb.	\$5.80	\$5.80
Sheet iron, galvanized (24 gage), Pittsburgh, per 100 lb.....	\$4.85	\$4.85
Galvanized barbed wire, Pittsburgh, cents per lb.	\$4.35	\$4.35
Galvanized wire, ordinary, Pittsburgh, cents per lb.	\$3.95	\$3.95
Cement (carload lots), New York, per bbl.....	\$2.22	\$2.22
Cement (carload lots), Chicago, per bbl.....	\$2.31	\$2.31
Cement (carload lots), Seattle, per bbl.....	\$2.65	\$2.65
Linseed oil (raw, 5 bbl. lots), New York, per gal..	\$1.18	\$1.20
Linseed oil (boiled, 5 bbl. lots), New York, per gal.....	\$1.21	\$1.23
White lead (100 lb. keg), New York, cents per gal.	11	10
Turpentine (bbl. lots), New York, cents per gal..	53	51