

Electric Railway Journal

Consolidation of *Street Railway Journal* and *Electric Railway Review*

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More Business in Government, Less Government in Business

THIS idea, which was adopted as a text by the United States Chamber of Commerce at its meeting last month, seems also to be the guiding policy of the present national administration. A desire to secure help from industry in the work it has to do and to undertake by government action nothing which can be carried on more effectively by private initiative has already been expressed by the Secretary of Commerce. Another significant declaration bearing upon the same matter was contained in addresses made at a banquet in New York last week in honor of the founding of the *New York Commercial*, attended by the President and the Secretaries of War, Commerce and the Interior. The occasion, the 125th anniversary of the founding of an important business paper, was an appropriate one in which to outline the essential correlation between business prosperity and national prosperity. This thought was voiced by the President, who held that the business man should not be prejudged as a criminal, but recognized as an important factor in national prosperity. The close connection of the business press with industry was also recognized in the address of the President, as well as in that of Mr. Hoover. This position on the part of the national government is most encouraging, especially at the present time when there is so much unemployment and stagnation in business. With such a sentiment, there should be a revival of industry.

Get the Young Engineer While the Getting Is Good

ELSEWHERE in this issue is a graphic portrayal of the value of a capable man in charge of rolling stock. If similar data for other departments of a railway could be portrayed as graphically, the results would doubtless be just as striking. Such men are of inestimable worth to a company, and more young men of the necessary ability should be in training as future master mechanics, superintendents of equipment, transportation engineers, power or track engineers, superintendents and general managers.

This month the engineering schools of the country send forth a large number of potential civil, electrical and mechanical engineers—young men with good fundamental training and most of them with plenty of ambition and energy. Some of these future leaders should be encouraged to come to the electric railways, where every one knows they can find plenty to do. The trouble is—the reason they do not come is—first, that no one goes after them; there is no organized and very little individual effort to induce young men to come to electric railways, and, second, that when they do come it is in only a few cases that the railway actually makes it worth while, opens up the right opportunities to them.

Not that they should start at the top! By all means the opposite should be the case. But the opportunities

ahead should be made clear and the positions which they may ultimately attain made sufficiently attractive as to financial status and responsibility.

The continued development of organized methods to absorb young engineers into other engineering industries should be sufficient indication of the value of such effort. The electric railway has been slow in this line. But the present is a good time to change. There is a new crop of young engineers. Some of the industries which usually absorb many from the annual production are operating on a restricted basis and will not take the usual number this year. Electric railways can normally use more men in summer time. Why not make a study to see where young engineers could be used to advantage and get them now that the getting is good?

Jitneys Regulated in Their Last Strongholds

LOCAL legislation in Kansas City, Mo., and state legislation in New Jersey and Connecticut give prospect of doing much to bring jitney competition within reasonable bounds in these places. The quarrel of the railways with the jitneys has never been with these vehicles as such, but with them on the score of their unreasoning and unreasonable competition on anything like a comparable basis. The jitneys have continued in use in the places mentioned long after similar vehicles were banished elsewhere, from a combination of circumstances, but mostly because of political chicanery. In Kansas City they have now been relegated to operation on streets where there are no railways, while in both New Jersey and Connecticut prospective operators of the jitneys must obtain from the local state commission a certificate of convenience and necessity before being permitted to operate. In neither of the states mentioned has the new law yet begun to function, so no precedents have been established as to the attitude of the local bodies with respect to regulation, but the commissions have set to work to organize the machinery therefor. In Connecticut, for instance, the commission has called upon the local governing authorities to indicate routes for the jitneys, thus preserving a measure of home rule.

In Kansas City the lessons of the benefits of the new legislation are fast being driven home. The receivers of the Kansas City Railways, true to their promise, have placed about 10 per cent more cars in operation. This service would have been provided before except that under jitney competition there was not enough traffic to pay for keeping the cars on the streets. These additional cars have had a salutary effect, with the result that in the month of operation under the ordinance the public view has changed to a marked extent. The bitter enders will of course stick to the jitney to the end. That is their prerogative. But the real place of the jitney as a service supplementary to the trolley instead of being competitive with it appears now to have been firmly established in the public mind in Kansas City.

From "Interurban" to "Electric Railroad"

REFERENCE is often made to the name "interurban" as being an onus—a word too easily made over in common parlance into "inter-ruben" and carrying a meaning not altogether complimentary. Some have suggested that an effort be made to rename the interurbans "electric railroads," on the supposition that this would lift them to a higher plane of public esteem. This may help, but cannot alone do the trick, for an interurban by any other name would still be subject to criticism—if criticism was deserved. But there is one way in which the desired end may be attained, and that is by such improvements in cars, roadbed and service as will earn for the property the reputation of being a real railroad.

An evolution of this kind has been witnessed on the Chicago-Milwaukee line operated by Britton I. Budd, whose effort has been persistently directed toward making the service of this road comparable with the high-grade steam road service with which he competes. He has very nearly attained that goal, with the result that the traffic handled has increased enormously, and the remark is now frequently heard, "It's a real railroad." The word "interurban" doesn't seem to apply any more. At one time, like many other electric lines, it was better characterized as an extended street car line, but it has won the more desired term of railroad because it is one. A similar evolution is now well under way on the Indianapolis-Louisville line under the direction of Harry Reid, and the policy being pursued promises to bring much new business and win for it the favorable public attitude sought. Some of the improvements made and in the making on this line are reviewed elsewhere in this issue. Without such actual physical evolution in an interurban property there can be little accomplished by an effort merely to change the term of reference.

Repair Versus Replacement in the Rolling Stock Department

ONE effect of the erstwhile "hard-up" condition of the electric railways has been a campaign of rolling stock rehabilitation. Superannuated bodies and trucks have been scrutinized to determine whether a year or two more of service could be squeezed from them. Cars which were awaiting only financial amortization before destruction have been refurbished up and re-commissioned. In ordinary times the economy of much of this work would be questionable. In the hard times which have recently been passed through economics gave way for the time to bitter necessity. This was marking time, as was pointed out editorially in the May 21 issue of this paper, but marking time has its place in transportation as well as military practice provided it is not continued too long. Marking time produces no speed toward progress, it simply keeps the army in step, or, in electrical phraseology, in synchronism.

There will always be an excuse or a reason for re-vamping some rolling stock, particularly to adapt it to changed transportation requirements. But the wholesale continuation of this practice will soon cease. In other words the era of repair will give place to the era of replacement. The former has, however, brought out clearly the excellent qualities of much of the work of the builders of many years ago. Thus, in last week's issue was an article telling of work done by the New

York State Railways on some motor cars and trailers. The cars of one batch were originally open bench summer cars. These were made over into closed motor cars some years ago and have now been remade over into center-entrance trailers. The fact that they would stand all of this, even allowing for the reinforcing which necessarily accompanied the remodeling, shows that they originally had good stuff in them, well fabricated and finished.

Fare Changes and Conductors' Morale

CONDITIONS on a certain railway which will be unnamed prove again that when a change in fare becomes necessary, failure to adopt a system that commends itself as just to the average layman is as bad for platform morale as it is for public relations. On this particular property the change in fare was an increase and the line was divided into equal-length fare zones, while the line itself operates in and between several practically contiguous cities. To cross the dividing line means the payment of a second fare whether the passenger boards the car $\frac{1}{2}$ mile or 3 miles back or whether he is riding another fraction of a mile or several miles more. To make the matter worse several of the zone limits occur at points where there is naturally considerable short distance riding from one side to the other of the selected zone line. The obvious result has been the dissatisfaction of a great many riders who are expected to pay double fare for a distance that may be less than many people obtain for a single fare. Of course, the grumblers vent their grievances on the company representative nearest at hand—the unhappy conductor. Day in and day out he is greeted with such ire-provoking expressions as: "What kind of a railway is this, anyway?" "Why didn't you yell out that it meant another fare to ride another block?" and so on to the point of fisticuffs.

Such conditions as this mean something more than loss of traffic. They are sure disrupters of the conductor's morale and of his confidence in the management. Neither efficient fare collection nor enthusiastic ride selling is to be expected when the company has adopted—or some commission has compelled it to adopt—what looks like the easiest way of devising a multi-fare system. Would it not have been better to have a system of zones that would seem a little more logical to the car rider, *i.e.*, with zone points at natural traffic division points? It is not necessary that the zones should be of equal length provided the average rates per mile do not differ greatly and the total fare for the entire ride is reasonable. Such a plan would permit the zone limits to be placed at points where the greatest number of car riders would not be asked to pay an extra 6 cents or 10 cents for a ride of a few blocks and would largely do away with any considerable agitation for overlaps or lower fares.

On the selection of its zone points a company can usually get good advice from its conductors. They are the ones brought into closest contact with the company's customers, and they know the way in which any fare plan is likely to be regarded by those who pay fares. In fact it is a good rule in any kind of business that a merchant must convince his salesmen that the goods they have to sell are worth the price and that the sales conditions are fair before he can be very successful in bringing the customer to this belief. This rule should apply in electric railroading.

Blighted Districts and City Planning

AMONG the interesting features of the report made by the St. Louis Planning Commission on a transit system—present and future—for that city is the discussion on blighted districts, or those areas of low assessed values which exist in most cities between the business district and the more popular residential districts. From many standpoints it would seem most desirable if the blight on these districts could be removed. To the municipality they mean sections of the city from which the tax yield must be low; to the electric railway they mean the operation through them of relatively unprofitable car-miles to carry the passengers to and from the outer districts, while to the property owner these deteriorated districts obviously represent a direct monetary loss. With regard to such areas in St. Louis, Harland Bartholomew, engineer of the commission, says.

"Hauls of 5 or 6 miles are not the exception but more nearly the rule. Even the haul would not be so objectionable were it not for the fact that nearly half of it is through sections of the city which have constantly deteriorated in usefulness and from the standpoint of transit are almost entirely unremunerative."

To some people the cause of the blight which has fallen upon these ill-fated districts, lying between the business and high-class residential sections of the city, is the unit fare. If a lower fare were charged for the shorter ride to them as compared with a higher fare for the longer ride to the outer and more favored regions, they say, the salvation of these districts would be secure. The owners of the buildings then would be encouraged to tear down their old-fashioned houses and erect better structures in their place to accommodate the tenants to whom a difference of a few cents in fare per ride would be an object.

It is not well to dogmatize about such matters from appearances, but the blighting of a city district has so many possible causes that it is usually unwise to say that it is due to any single factor or that in any particular case it could be corrected by such a simple plan. It is more probable that even with a zone system the same conditions would prevail to very much the same extent and that the causes lie deeper than simply the rate of fare.

In fact, in the usual rapidly developing American city there are almost bound to be certain areas surrounding the business district which are changing in character from residential to commercial. Usually the history of these districts, or a good part of them, is about as follows: At one time they constituted a first-class residential neighborhood on the fringe of the city as it then existed. As the commercial area expanded, trade gradually pushed its insidious way in among the mansions. First perhaps came the dentist, then the apothecary's or milliner's shop was opened, to be followed by the high-grade grocery store. Gradually the more

exclusive or prosperous residents moved outward and the former mansions became boarding houses, then possibly tenements. In all of these cases the trolley fare was probably not the controlling factor. The ultimate hope of such a district is not that its high-grade residential character will be revived—that is probably hopeless—but that it relatively will come nearer the business district and finally become part of it. Then the old buildings will give place to modern office structures, stores or warehouses, the assessable value will again increase and the owner will be happy.

The only effects which the development of electric railways and rapid transit systems can have on this natural condition are to hasten the change and to direct it along certain routes. This hastening may be first in the retrograde character mentioned and then in the renaissance of the property as regards value. In Brooklyn, for example, Fourth Avenue has already been improved in many spots because of the building of the subway. In fact, both offices and stores will be apt to follow along a rapid transit line, like a vine, leaving between the arteries of trade triangular areas of a residential character. Neither the owners nor the city should worry unduly about these fluctuations in real estate value. The "blighted" period is very apt to form the chrysalis stage of development, to which city real estate is subject.

Electric Railway Engineers Constitute a Large Fraternity

COMMITTEE activity in the American Electric Railway Engineering Association is now at its height. The meetings are being well attended and a fine spirit is manifest. One of the most impressive signs of efficiency in this committee work is the spirit of good fellowship that marks all of the gatherings of committeemen. This fact impresses one with the value of such meetings from the human standpoint, which in itself would justify the time and expense involved in getting together.

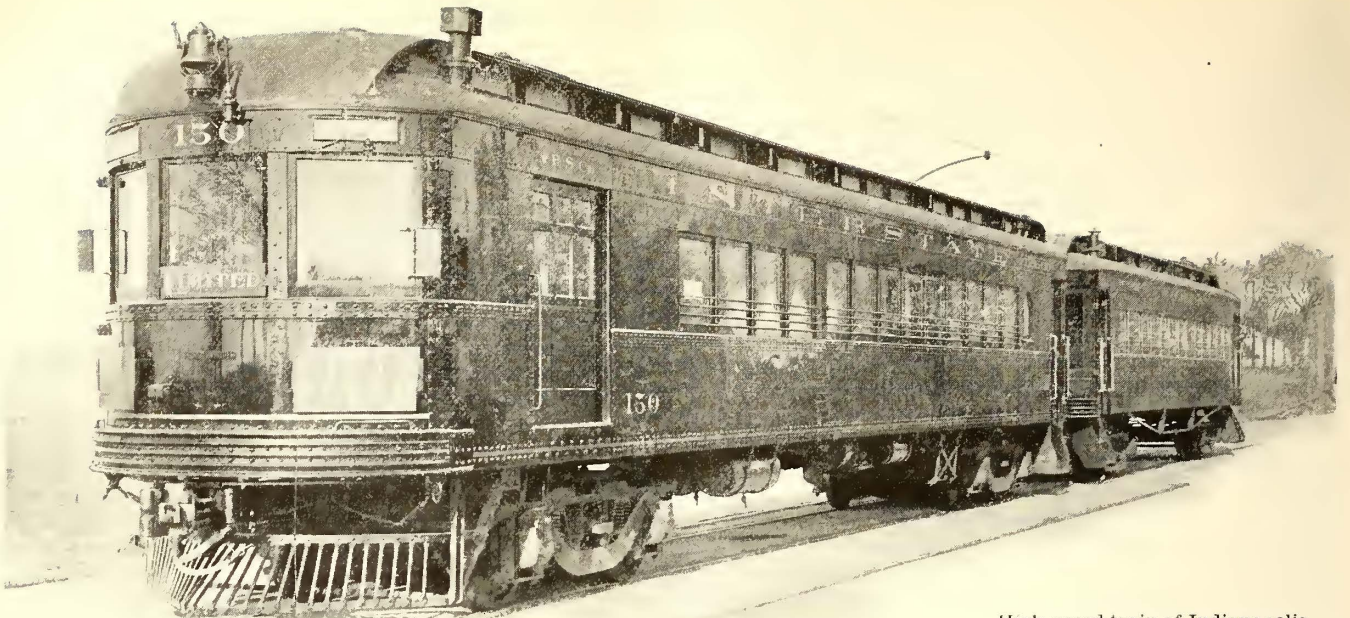
For the benefit of the technical development of electric railway work it is necessary that the responsible engineers be furnished ample opportunity to meet at these committee sessions and at the conventions of the Engineering Association, otherwise they are apt to be provincial and academic. The large attendance at committee meetings shows that this truism is appreciated. The

helpful personal relations which are established thus are maintained between them by correspondence, chance or planned visits, the reading of "personal" items in the electric railway press, etc. There has thus been built up in the electric railway industry a national, although informal, engineering fraternity, membership in which should be highly prized. Every such opportunity should be embraced to foster the spirit of brotherhood that the electric railway engineer is privileged to enjoy.

Quotation from the Federal Electric Railways Commission Report

No. 123

GENERALLY speaking, this (introduction of economics of operation) can be done by the elimination of deadheads and other free service, the abandonment of non-profitable lines and, where practicable, the substitution of one-man cars for heavier equipment, the modification of special taxes or provisions for paving, snow removal, street closing, tolls, contributions toward the cost of public highways, bridges, etc., reduction of such rentals and power rates as may on investigation prove excessive, the co-operation with the public in developing faster schedules and installing skip stops at convenient places, rerouting of cars, the use of trail cars, keeping street car tracks clear of traffic and other congestion, due to parking of motor cars on curbs, and the regulation of vehicular traffic.



High-speed train of Indianapolis-Louisville interurban line. Note the novel bell on front of motor car used in addition to whistle.

Developing an Electric Railroad

Indianapolis-Louisville Interurban Is Undergoing Extensive Rehabilitation and Improvement—Features of New Steel Motor Cars and Rebuilt Trailers for Use in High-Speed Limited Service Are Described—Other Improvements to Be Related in Articles to Follow

NOTWITHSTANDING high prices and other adverse economic conditions, the Interstate Public Service Company, Indianapolis, Ind., under the direction of Harry Reid, president, has been extensively improving its 117-mile Indianapolis-Louisville interurban property and service during the past two years. The betterment work has followed along a plan designed to develop a railroad capable of rendering a high character of passenger and freight service between these two important terminal cities. While all details of the plan have not yet been fully realized, the physical improvements already accomplished, coupled with the evident disposition of the operating officials to give the public the kind of service it wants, have had a marked effect in attracting patronage to the road. This is reflected in the accompanying tables showing the recent growth in freight and passenger traffic.

The major betterments already carried out include the purchase of the Louisville & Northern Railway & Lighting Company and the Louisville & Southern Indiana Traction Company and the merger of them with the Interstate company; the purchase of new motor

cars, the building of trailers and the inauguration of a new faster through limited service between Indianapolis and Louisville; the purchase of locomotives and new freight box cars and the inauguration of new through over-night freight service; the change-over of the 62-mile mid-section of the road from 1,200 volts to 600 volts to conform to the remainder of the system; abandonment of old 25-cycle transforming equipment and the installation of new 60-cycle substation equipment; the reconstruction of the old transmission line for higher voltage, the building of 54 miles of new transmission line and the dismantling of two obsolete power houses with arrangements for purchase of power, and a large amount of work on overhead and distribution systems and on the track and roadbed. Among the further improvements planned for the immediate future are the building of new shops, on which work has recently begun; the probable purchase of necessary equipment and inauguration of a parlor car and dining car service with possible sleeping car service; the installation of further automatic substation equipment, etc.

Perhaps of greatest interest at the moment are the

PASSENGER EARNINGS, INTERSTATE PUBLIC SERVICE COMPANY AND INDIANAPOLIS & LOUISVILLE TRACTION RAILWAY

	1919	1920	1921
January	\$89,585 70	\$116,207 21	\$131,814 43
February	84,807 51	111,489 29	119,405 38
March	95,465 18	124,092 35	136,289 42
April	94,785 72	127,294 56	
May	104,089 51	134,507 01	
June	101,370 90	128,922 31	
July	116,066 87	141,092 27	
August	136,278 37	149,082 99	
September	130,318 67	146,569 34	
October	125,267 12	139,529 14	
November	120,003 21	132,008 51	
December	121,362 82	138,512 29	

The operation of the Indianapolis & Louisville Traction Railway was taken over by the Interstate company in July, 1919. These figures include the entire line, Indianapolis to Louisville, Ky.

FREIGHT EARNINGS, INTERSTATE PUBLIC SERVICE COMPANY AND INDIANAPOLIS & LOUISVILLE TRACTION RAILWAY

	1919	1920	1921
January	\$7,029 47	\$13,349 00	\$14,378 70
February	7,406 60	15,617 19	16,146 92
March	9,235 31	20,362 71	21,024 46
April		22,275 37	
May	10,203 83	23,127 48	
June	12,159 24	28,886 62	
July	12,428 94	23,949 87	
August	17,031 42	21,571 49	
September	19,088 46	27,598 62	
October	17,666 28	24,800 50	
November	14,741 09	20,556 98	
December	12,395 49	16,085 10	

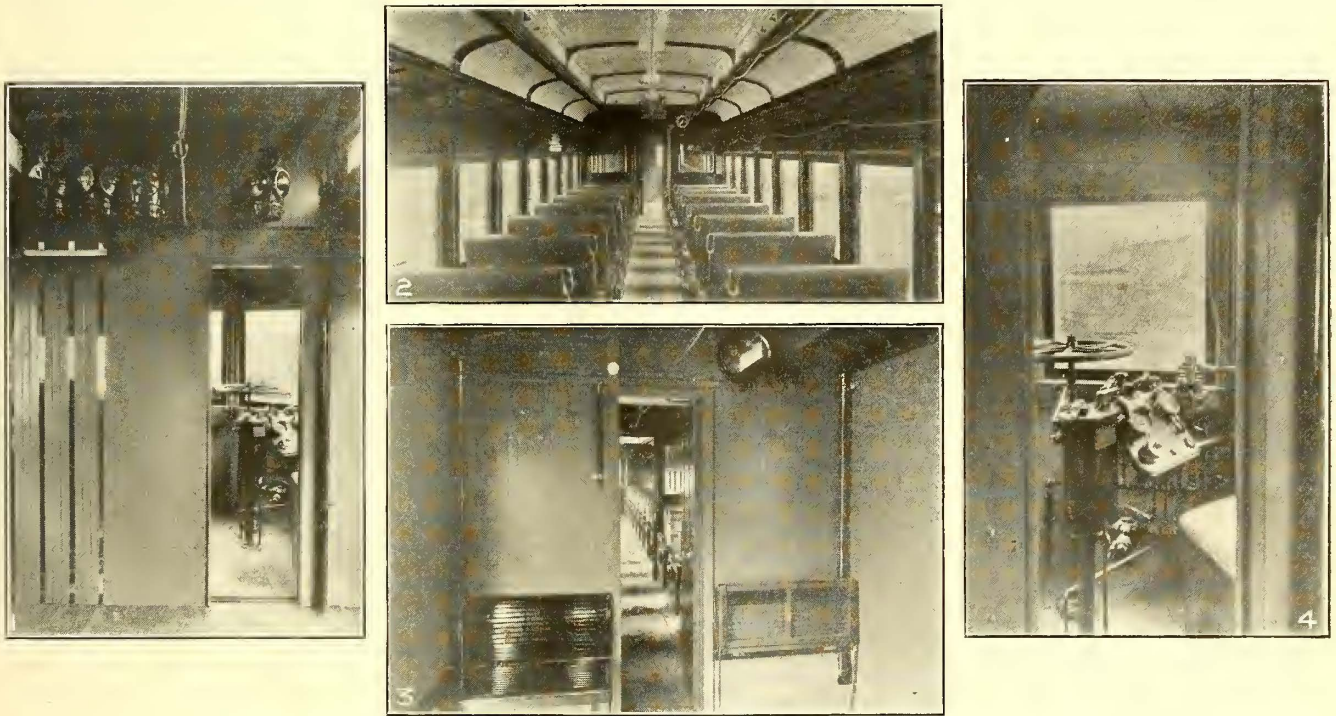
The operation of the Indianapolis & Louisville Traction Railway was taken over by the Interstate company in July, 1919. These figures include the entire line, Indianapolis to Louisville, Ky.

new rolling stock and the plans of the equipment department for a new shop at Scottsburg, Ind. In the last two years the rolling stock purchases have included twenty new box cars, a 37½-ton and a 25-ton locomotive and eight new steel passenger cars. Because of the great amount of time and design talent applied, these passenger cars are of particular interest. They are quite fully pictured in the accompanying views.

In general, these cars are of steel construction with a composite superstructure and monitor deck roof, with the interior arranged in passenger, smoker and baggage compartments. They are 62 ft. long over bumpers, seat sixty passengers and weigh 95,500 lb. They are equipped with special Baldwin trucks, having 7-ft. wheelbases and placed at 39-ft. centers. These trucks are equipped with 36-in. rolled steel wheels and 5-in. x 9-in. journals and Stucki self-centering and positive-rolling side bearings. The body side bearing is made with a removable wearing plate. The spring design on the trucks is such as to preserve good riding

from the two side sills and two center sills. The side sills consist of 5-in. 6½-lb. channels extending from the buffer beam at the front end to the corner post at the rear end. The center sills consist of two 7-in. 15-lb. I-beams extending from front to rear buffer and reinforced with continuous pressed-steel section ¾ in. thick extending from back of the bolsters to near the ends. Certain features of the underframe and vestibule steel work provide an anti-telescoping construction. The bolsters are of the built-up type consisting of plates and rolled sections which are fastened to the center and side sills.

The floor beams consist of 5-in. 6½-lb. channels extending from side sill to side sill and riveted to the horizontal flange of the side sills and to the side posts. The end sills consist of 6-in. 8-lb. channels supplied with 12-in. x ¼-in. top and bottom cover plates extending from side sill to side sill. No diagonal bracing was provided in the underframe, except for those braces in the platform construction which extend from each



THESE VIEWS ARE OF THE INTERIOR OF THE MOTOR CAR

No. 1—Motorman's cab partition showing open construction and heater location.

No. 2—Looking forward from rear of main passenger compartment showing interior finish—aisle mats not in place.

No. 3—Rear of baggage compartment showing folding seats, city fare register location, etc.

No. 4—Convenient mounting of instruments and controls in operating cab.

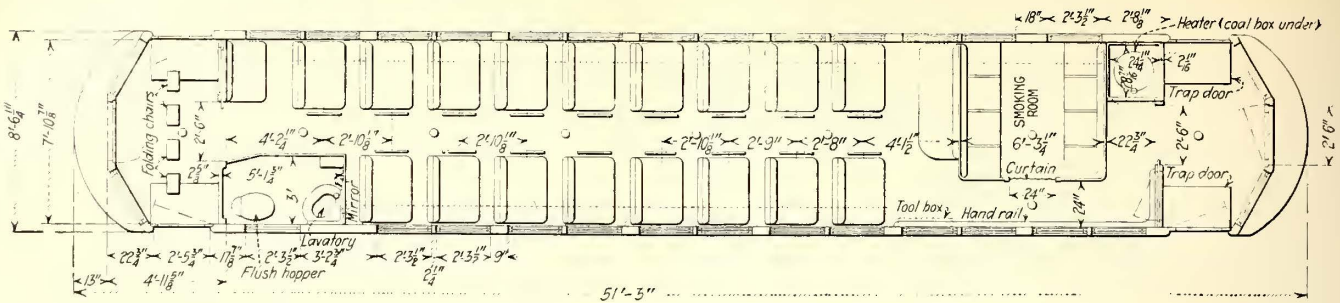
qualities through a wide range of live load. This is obtained by the use of an auxiliary set of bolster springs which do not come into bearing until the load has exceeded a certain amount, a feature developed for the last cars bought by the Chicago, North Shore & Milwaukee Railroad. Adequate spring support for a heavy load is thus secured without making the car ride stiff under light load conditions.

The further major equipment of these cars comprises four G.E.-254, 150-hp. motors with automatic field tap control and General Electric type PC multiple-unit control arranged for single-end operation. Westinghouse 38-ft. type D-3-EG compressor and type J governor are used. The couplers are of the Tomlinson MCB radial type, conforming with the C.E.R.A. standard.

The main support of the steel underframe is derived

corner of the platform to the near center sill. The entire underframe is covered over with steel plates which tie all the members together, giving a certain amount of diagonal bracing and serving to fireproof the floor from the equipment. The buffers were made from 10-in. 15-lb. channels applied with the flanges outward and bent so that the radius of the outside flange is 5 ft. A 5½-in. Rico heavy-weight anti-climber section extending the full width of the car was secured to the web of these buffer-beam channels.

The side sheets, consisting of No. 12 gage steel and extending from the bottom of the side sills to the belt rail, with No. 14 gage steel above, are riveted to sill, belt rail and posts. This side-sheet construction is strengthened by a 4-in. x ½-in. bar riveted to the side sheet and extending from one end of the car to the other to form the belt rail. There is also the further



FLOOR PLAN OF NEW INTERSTATE PASSENGER CARS

strengthening afforded by a 3-in. x 3-in. x 1/4-in. angle extending from end to end of the car body.

The side posts are made up of 3-in. x 2-in. x 1/4-in. Tees sandwiched in between two sections of oak posts and covered with two pressed steel sections and a cover plate riveted over the joint, giving the appearance of a metal post. Each post is welded to the belt rail and side sill. Every third carline is of T-iron and wood composite construction, while the two intervening carlines are of wood.

The interior of the car is finished in cherry, stained mahogany, and the Agasote head lining is painted white, giving a pleasing and bright interior appearance. Center lighting is supplied by two circuits of 94-watt lamps. The fabrikoid covered seats were furnished by Heywood Brothers & Wakefield Company, New York. The bell cord is carried through the center of the car in anti-swinging hangers.

MONITOR DECK ROOF DESIGN USED

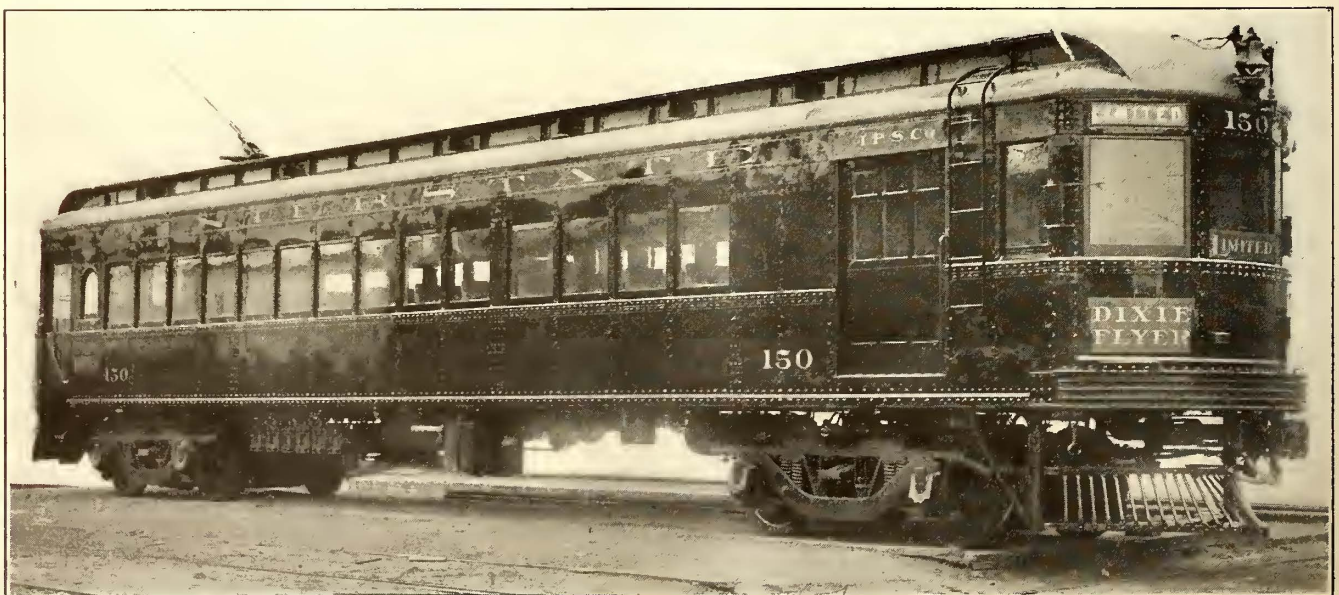
After a study on the part of H. H. Buckman, master mechanic, the monitor-deck type of roof construction was decided upon because of the superior ventilating properties claimed for it. Ventilation is afforded by twelve deck-sash automatic ventilators supplied by the Automatic Ventilator Company and located two in the baggage compartment, four in the smoking compartment, five in the main passenger compartment and one in the toilet.

The rear vestibule is arranged with a door on either side and equipped with trapdoors so that the vestibule

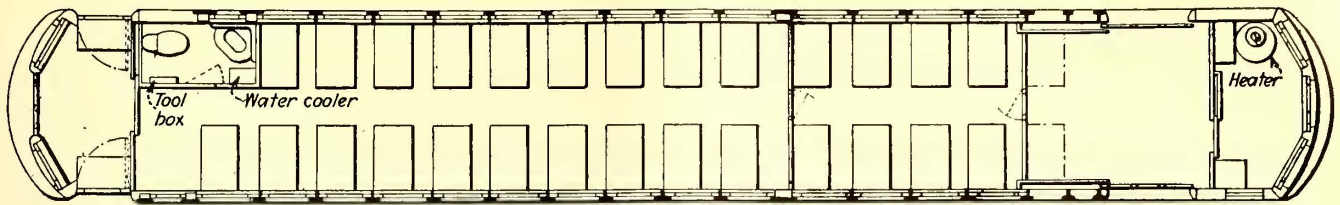
may be closed up tight. The platform is reached by mounting four steps of heights from rail to car floor of 16 in., 12 in., 12 in. and 12 in. The rear vestibule is also equipped with a train door, as it is the plan to use these new cars in limited service and haul trailers. No train door is provided at the front end, however.

The toilet is located just inside the rear vestibule and is equipped with a water-flushing bowl, wash basin, mirror, etc. The tool box is mounted on the inner partition and the water cooler is inset in the forward corner of the toilet. A 25-gal. tank for carrying the flushing and washing water supply is located overhead in the toilet room and is filled from either side of the car by attaching an ordinary garden hose to the pipe leading from the tank to that side of the car and fitted with the male end of a standard garden-hose connection. When the tank is filled through one of these pipes, the other acts as an overflow, and as these two pipes enter the tank at the top, no valve is necessary in either.

Through the use of the Peter Smith hot-water heater in the motorman's cab the full capacity of the baggage compartment is available for handling baggage and express shipments. Two folding sheets attached to the partition between the baggage compartment and the smoking compartment are available for use of passengers when the car is heavily loaded and there is room in the former. The motorman's cab is separated from the baggage compartment by a partition made of pressed steel sections with wood fillers, designed to protect the motorman from being crushed by the heavy



NEW HIGH-SPEED 62-FT. STEEL PASSENGER CAR OF THE INTERSTATE PUBLIC SERVICE COMPANY. INDIANAPOLIS, IND.



FLOOR PLAN OF INTERSTATE TRAILER USED ON LIMITED TRAINS

baggage coming forward in case of collision. This partition was built with 1½-in. openings between the pressed-steel sections in order to let out the radiated heat from the stove and thus prevent the motorman's cab from being uncomfortably warm. The first three openings adjacent to the door, however, were covered with a plate to prevent any one from getting his fingers jammed when the sliding door is opened. An accompanying picture shows the construction of this partition and also the provision made for carrying the train signal lamps and flags.

The arrangement of the motorman's cab is particularly interesting. The controller and brake valve are located for convenient operation from a sitting posture on a built-up seat adjacent to the window at the right side of the cab. Between the door and air valve is an instrument board on which is mounted an ammeter, the air gage and between these an order clip or holder, a snap-switch controlling the headlight, a push button for signaling the conductor as a check upon orders when approaching each siding, and a push-button switch connected with a small light which illuminates the train order when in place on the board. Just above the board are two small levers operating air valves, one of which operates the sander and the other a locomotive bell. The whistle valve is located overhead in the front corner of the cab and a cord from it hangs down at a convenient point for the motorman. Both the bell and sander valves are of the Viloco throttle type. The hand brake staff is located in front of the control mechanism and given an upper support and bearing on the triangular steel frame attached to the dash and supporting the control board and other mechanism. This hand brake is equipped with a large wheel and arranged for 100 per cent braking. A Drew mirror was installed on each front corner post wherein, from a sitting position, the motorman can look through the side cab windows into the mirror and watch the rear end. The Interstate motormen have found the two mirrors to be very helpful as a means of watching to see if the rear trucks split switches when negotiating city track special work, in addition to the usual use for observing passenger movements. By watching in the left or right mirror, depending on which way the rear trucks would go if the switch were split, the motorman will note immediately any sudden swing of the body or see the corner of the truck swing out and stop the car in time to avoid damage.

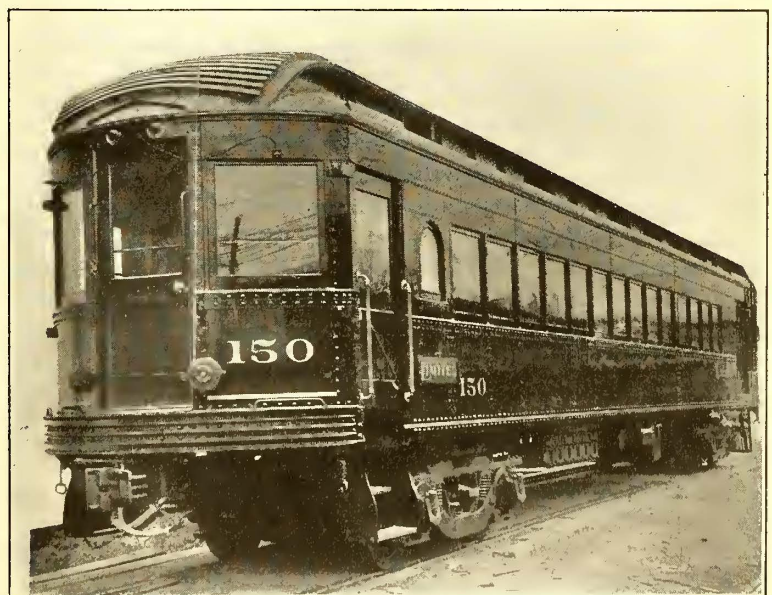
Located on the inside of the motorman's cab partition is the switch cabinet for controlling various car circuits. The telephone used in communicating with the dispatcher from points along the line is mounted on this same partition beside the switch cabinet, and a small writing desk on which to write orders is located just below the cabinet. There is also a rack on which extra jumpers, air hose, coupling

pins, sleet cutter, shackle bar, etc., are carried. A light was installed in the switch cabinet and a hole cut in the top and bottom. The bottom hole permits light to shine on the desk where orders are written, and the upper hole on the heater gage. A ½-in. thick rubber mat is provided on which the trainmen can stand when using the telephone as protection against static shock.

LOCOMOTIVE BELL AN EXCELLENT ADVERTISEMENT

One of the unique features of these cars is their equipment with an air-operated locomotive bell to serve as a warning alarm in addition to the whistle and foot bell. It is a No. 602 Baldwin Locomotive bell which has a tone somewhat higher than commonly used on steam roads. The sound of this bell is claimed to carry better than the whistle, particularly under fog and high wind conditions. It is used at particularly bad crossings and while passing through the smaller towns, or anywhere that it is desirable to sound a warning continuously or repeatedly. The motormen are instructed to use the whistle as they have always done and to use the bell as an additional alarm. One consideration in this connection was that it is considerably cheaper to operate the bell than it is to blow the whistle repeatedly. The bell consumes 0.7 cu.ft. of air per minute while the whistle consumes 40 cu.ft. per minute. The officials of the railroad have also found that the novelty of the bell has been an excellent advertisement for the cars of the Interstate company. Furthermore, the traffic police of Indianapolis have encouraged the motormen to sound this bell at the main intersections where they are stationed, as it is very effective in helping them clear the streets.

Particular pride is taken by the designer and builder of these cars in the distribution of the various equip-



REAR OF STEEL MOTOR CAR, SHOWING END CONSTRUCTION

ment underneath the car. This has been accomplished in a way which has not only given an exceptionally even weight distribution but has left every piece of apparatus accessible. These new passenger cars were built by the Cincinnati Car Company.

REBUILT CARS FOR TRAILERS

As it was planned to use trailers with the new motor cars in the fast limited service between Indianapolis and Louisville, the Interstate Company is planning to provide the trailers by rebuilding old motor passenger cars, one of which has been completed and placed in service thus far. This rebuilding work was done by the American Car & Foundry Company, Jeffersonville, Ind. While of wood construction, the trailer was given the appearance of a steel car by putting steel plates on the sides. The underframe was strengthened by using pressed-steel sections to reinforce the I-beams and channels. The ends were rebuilt to conform to the same radius as that of the motor car and reinforced with

DATA COVERING NEW PASSENGER CARS

Length over buffers.....	62 ft.	0 in.
Length over dash.....	60 ft.	6 in.
Height rail to top of roof.....	13 ft.	1 in.
Extreme width.....	9 ft.	2½ in.
Width of seats.....		38 in.
Width of aisle.....		28½ in.
Rail to bottom of sill.....		43 in.
Length of rear platform.....	6 ft.	4 in.
Weight.....		95,500 lb.
Seating capacity.....		60
Post centers.....	2 ft.	8½ in.
Length of baggage room.....	8 ft.	3 in.
Truck centers (approximate).....	39 ft.	0 in.
Wheelbase.....	7 ft.	3 in.
Size of wheels.....		36 in.
Baggage door opening.....	3 ft.	10½ in.
Bulkhead door openings.....	2 ft.	4 in.
Rear door opening.....	2 ft.	5 in.

gers. The room is curtained off from the side aisle leading from the vestibule around to the main passenger section. A toilet equipped very much like that of the motor car was installed at the end of the car body opposite from this smoking room. The floor plan and various dimensions of this car may be seen in an accompanying drawing. The trailer is 51 ft. 3 in. long over buffers, weighs 54,000 lb. and has a seating capacity, including the four chairs on the observation platform, of fifty-one.

The hot-water heater is very neatly and compactly installed at the end of the car between the smoking room and the bulkhead and inclosed in a cabinet so that it is entirely out of the way and, consequently, unobserved.

The interior finish of the car is practically identical with that of the motor car, including the mahogany finish, white headlining, Wakefield fabrikoid covered seats, central lighting with two circuits of 94-watt lamps, etc.

The trailer and motor car are equipped with a Faraday signal system which is arranged in such a way that any conductor can send and receive a signal at the same time. Thus, if a rear conductor gives a stop signal while the forward conductor is passing up a go-ahead signal, the latter will get the signal from behind simultaneously and will be able to reverse the signal he may be giving. This is all worked out so that there is only a single wire between cars. The bell cord on one car rings the buzzer on the car ahead. The motorman's signal on the motor car is a single-stroke bell.

THROUGH PASSENGER SERVICE OF THE INTERSTATE

Through trains have been operated between Indianapolis and Louisville since 1908, this service requiring until recently the use of cars equipped for both 600 and 1,200-volt operation. For some time back six limited trains each way each day, making the trip in four hours, have been run. With the difficulties of two different voltages eliminated and the new cars in service, it is expected that this service will soon be replaced by seven limited trains a day each way, and that the run will be made in three and one-half hours. The shortening of the running time will be made as rapidly as track and power conditions permit. At present limited trains leave Indianapolis for Louisville at 7, 9, 12, 2, 4 and 7 o'clock each day. Northbound, trains leave Louisville at 7:30, 9:30, 11:30, 1:30, 4:30 and 6:30 o'clock every day. Southbound the trains are called "Dixie Fliers" and northbound "Hoosier Fliers."

When the new cars were installed Mr. Reid invited a party of prominent business men and city officials from Louisville to be the guests of the company for a trip to Indianapolis and return on one of the new cars. A week later a similar party of Indianapolis business men and officials was taken to Louisville and return. In ad-



INTERIOR OF REBUILT TRAILER WAS FINISHED IN PLEASING WAY

anti-telescoping construction similar to that used on the motor cars and anti-climbers. Both vestibules were inclosed, and while arranged for double-end operation, the vestibules were so built as to be used for an observation platform at the rear of the car. The end windows were glazed with ¼-in. polished glass which was brought down to within 12 in. of the floor. Four standard Pullman folding chairs are placed in this rear vestibule, and these are removed to the opposite end, if for any purpose the direction of running the car is reversed. An advantage of closing up the rear vestibule and using it for an observation platform is that it automatically blocks entrance and exit at this end and forces the ingress and egress of passengers at the forward end, so that when the trailer conductor is back throwing a switch or protecting the train, the conductor on the forward car can watch both the motor car and trailer entrances.

The trucks used are old Peckham design with 6-ft. 4-in. wheelbase equipped with new springs and having good riding qualities. The old Gothic sash were removed and double letter boards installed. The car was also equipped with permanent storm sash. A smoking compartment was arranged for the trailer by building in a compartment at one end in a manner similar to that employed on some Pullman cars. This is equipped with two long cross seats which will seat eight passen-

dition to the special attention which these parties called to the Interstate company through the public press, the new cars have otherwise been the source of a great deal of very favorable advertising for the company and have undoubtedly attracted patronage to the road. The company also capitalized on the installation of the new cars for some good purchased advertising, though so much news matter about them appeared in the newspapers that not a great deal of purchased space was neces-

sary to inform the public of the improvement which had taken place.

In two following issues will appear descriptions of the new freight equipment placed in service by the Interstate, the new shop layout, the changes in the power system and the new substations, the freight service and nature of business handled and other points of interest in connection with the making of a railroad out of the interurban lines between Indianapolis and Louisville.

Southwestern Association Meets

Publicity and Public Relations Formed an Important Part of the Program of the Annual Convention at Galveston on May 18-21

THE seventeenth annual convention of the Southwestern Electrical and Gas Association was held at Galveston, Tex., May 18, 19, 20 and 21, with somewhat more than 250 delegates present. A. Hardgrave of Dallas, president, presided during the convention, and H. S. Cooper, secretary of the association, occupied the secretary's desk.

At the closing business session Saturday C. E. Calder, vice-president of the Dallas (Tex.) Railway and other Strickland interests in north Texas, was elected president; Alba H. Warren, vice-president and general manager of the El Paso (Tex.) Electric Company and former general manager of the Galveston Electric Company, first vice-president; S. R. Bertron, Jr., of the Houston Electric Company, second vice-president; John W. Carpenter of the Dallas Power & Light Company, third vice-president; J. M. Dickey, Galveston, treasurer. The executive committee will choose a secretary, and it is assured that H. S. Cooper will be retained in this position. This committee will also select a meeting place for next year and fix the time for such meeting.

News of the death of Col. J. F. Strickland of Dallas, president of the Texas Electric Railway, the Dallas Railway and various other north Texas utilities, was received just after the convention adjourned, but the delegates still in the city were called together and adopted suitable resolutions expressing sympathy for the family of Colonel Strickland and expressing profound regret at the death of such a leader among the traction men of the country.

The convention was called to order Wednesday afternoon by President Hardgrave. Mayor-elect Charles A. Keenan extended a welcome to the delegates, and this was responded to by D. A. Hegarty, general manager of the Brush Electric Company of Galveston, on behalf of the association.

A feature of the first session was an address by Martin J. Insull of Chicago, president of the National Electric Light Association, who urged that the public utilities of Texas and of the entire country enter into a joint educational campaign with a view to acquainting the general public with the true condition of the various companies. He laid particular stress on the fact that in this way the co-operation of the people can be obtained. Mr. Insull also urged the various companies to offer for sale and to put on campaigns to induce their patrons to buy stock, thus making the companies more or less co-operative.

Mr. Insull also addressed the convention on Wednes-

day, this being his principal address. As senior vice-president of the Middle West Utilities Company of Chicago, which operates in more than 500 towns of the Middle West and East distributed in fifteen states, Mr. Insull stressed the value of publicity. The general public must be informed of the credit conditions of the various electric light and power and traction companies if the credit of these companies is to be restored and maintained.

Mr. Insull described the national advertising campaign projected during the last year by the National Electric Light Association, and explained that more than \$1,000,000 had been spent to finance it. He said that this campaign is to assist the central stations of the electrical industry in obtaining friendly public opinion. For, he declared, if local agitation would die out, the ability of the local utility company to secure money would be improved. Mr. Insull declared that the American public is absolutely fair, provided facts are presented to it, and that the public utility companies need have no fear of the outcome if they centered in a publicity campaign.

President Hardgrave, Texas manager of the Middle West Utilities Company, in his annual address, delivered at the opening session, also stressed the need for a publicity bureau for the public utility companies. He declared that confidence between the public utilities and the people must be established, for, he said, the growth of a community depends upon the growth of the public utilities. One sure way to obtain this confidence, he said, is to encourage the purchase of stock in the utilities by the public. Mr. Hardgrave also recommended several changes in the constitution of the association, one being that the rule providing that the third vice-president be automatically promoted until he shall become president of the association be abolished. Mr. Hardgrave also stressed the importance of committee work, and recommended additional committees and that more questions be referred to committees for action. Work in committee, he said, will greatly increase interest in the association and promote efficiency in its work.

The report of the recently appointed "public policy" committee, of which W. B. Tuttle, first vice-president of the San Antonio Public Service Company, was chairman, was read and adopted. This report also laid great emphasis on the importance of a publicity bureau for the association. Mr. Tuttle recommended that a trained newspaper man be employed to head the bureau and that his special duty would be to keep the members of

the association and the newspapers of the state informed about the public utilities. Mr. Tuttle also said that the best way to get the people of Texas interested in their public utilities is to induce the people to invest in the utilities.

The report of Secretary H. S. Cooper summarized the work of the secretary during the year and gave some statistics of the association. The association has now 166 member companies among the privately owned public utilities in Texas and the Southwest and there are also a number of honorary members, the secretary being one of them.

J. H. Gill, assistant general manager of the Dallas Power & Light Company, addressed the convention on Friday. Mr. Gill declared that many towns have literally starved their public utility companies to death, through lack of knowledge of what the utilities were doing. It is the duty of the people to come to the aid of these companies, he said, and added that in nine cases out of ten the aid needed will be forthcoming if the people are informed of the real conditions. Publicity and direct interest of the public in the utility company through stock ownership were the underlying thoughts of Mr. Gill's address, and his recommendations met the indorsement of the convention.

E. P. Schoch, head of the department of chemistry of the University of Texas at Austin, made a brief address, explaining in technical terms the latest developments in the tests of Texas lignite as fuel for steam boilers. Mr. Schoch predicted that developments soon would prove that Texas lignite is the cheapest boiler fuel that can be had in Texas.

The trend of legislation in regard to utilities was discussed on Saturday, the closing day of the convention. A plea for state control and sound financing marked the papers and addresses.

FORMER MISSOURI COMMISSIONER ADDRESSES CONVENTION

Senator William G. Busby of Kansas City, former chairman of the Public Service Commission of Missouri, discussed "State Utility Commissions." Mr. Busby first told of struggles the commission had had to obtain proper recognition from both the utility companies and the general public. He then related the work of the commission and told of the success that had been its lot. He declared that the life, health and happiness of the people and the progress and growth of a community or city depend upon strong, healthy utilities, and that it is to the interest of the people that the public utilities should be treated fairly in the valuation of their property and in fixing their rates. He further declared that this degree of fairness could be obtained only through state utility commissions. In regard to sound financing Senator Busby said that every community is known by the character of its utilities and that people do not want to live or transact business in a city or community without utilities, transportation and power and lighting facilities, and that unless the utilities are treated fairly, investors will refuse to advance funds for their development or extension and the public will eventually be the loser.

M. H. Gossett of Houston, president of the Federal Farm Loan Bank, next gave his viewpoint of financing Texas utilities. Mr. Gossett said the franchises granted to any utility should be protected by the community, for where competitors are permitted, the service of the utility is impaired and the financial rating of the com-

pany lowered. He illustrated his point by mentioning the situation in Houston, where the jitneys are permitted to operate as competitors of the street railway lines. Mr. Gossett said the ideal way for financing any utility is by selling stock to the company's employees and to the public.

W. B. Head, vice-president of the Texas Power & Light Company of Dallas, discussed the trend of public utility legislation in Texas. He traced the development of such legislation step by step and told of the law now in effect that places the control of utilities in the hands of the city where such utilities operate. City Councils and city commissions in Texas, he said, are given as much power and authority over public utilities as Legislatures in other states. The viewpoint of any city is naturally unfair to the utility, he said, and the result is that utility companies in Texas are suffering. Community control of public utilities, as tried out in Texas, is an absolute failure, Mr. Head declared. Many times the utilities serve much territory beyond the jurisdiction of the city government, he said, and this makes it imperative that control be vested in a state commission.

Home town financing was discussed by S. J. Ballinger, commercial manager of the San Antonio Public Service Company, and G. W. Fry, general manager of the Abilene Gas & Electric Company.

At the concluding session Saturday, M. M. Phinney of Boston, formerly connected with the Stone & Webster interests in Texas, was elected to honorary membership in the association.

At the railway section meeting a number of interesting topics were discussed.

Committees appointed at the closing session of the general meeting follow:

Executive Committee.—Burr Martin, A. Hardgrave, C. E. Calder, Alba H. Warren, H. C. Morris, Charles W. Davis, S. R. Bertron, Jr., F. D. Murphy, W. B. Tuttle, G. H. Clifford, Howard Smith, R. J. Irvine, D. A. Hegarty.

Advisory Committee.—H. O. Clarke, K. L. Simons, F. L. Weisser, H. E. Danner, B. F. Cherry, A. Patterson, W. E. Wood, J. C. Kennedy, James P. Griffin, P. E. Nicholls, H. E. Borton, Frank Frost, P. A. Rogers, P. W. Campbell, C. Mason, L. L. Stephenson, H. B. Hearn, W. A. Darter, V. W. Berry, H. P. Hess, H. E. Hobson, F. G. Kune, C. A. Newning, Mac F. Sterrett.

Finance Committee.—J. E. Van Horn, R. G. Soper, C. H. Dickey.

RESOLUTIONS ON DEATH OF COLONEL STRICKLAND

Just after the convention adjourned news of the death of Col. J. F. Strickland of Dallas was received, and the meeting was immediately called to order again and the following resolution adopted:

In the death of Mr. Strickland not only has this association lost a loved and respected member, but also one of its founders, its first president, and one who has, in the seventeen years since, been a wise counselor and a vital force in all its work.

We feel further that the entire public utility interests of Texas have suffered an irreparable loss, for Mr. Strickland was the undaunted pioneer in the wide distribution of electric light and power and electric transportation throughout the state, and the people of Texas owe him a debt which can never be repaid.

And finally, as an employer, a counselor, a friend—even as an acquaintance—we will all miss him deeply and mourn him sincerely. Ever ready to aid, to advise, to be of use; kindly, courteous, generous and always just, we feel in his death a sense of personal loss which, at this moment, it is impossible for us adequately to express.

Merchandising Transportation

This Is the First of Several Articles on This Subject—The Author Considers, First, the Principles Governing the Successful Merchandising of Transportation and Then Shows What the Employees Can Do to Help

By W. H. BOYCE

General Manager Beaver Valley Traction Company, New Brighton, Pa.



THE EMPLOYEES' FIELD DAYS BEGIN AT 8:30 A.M. AND END AT 11:30 P.M., SO THAT ALL CAN PARTICIPATE

YOUR success and the success of your company depend upon your ability to sell car rides.

It matters not what the expenses are if you can so merchandise transportation that there is a comfortable space between the expense and receipt lines when graphically displayed.

Selling rides depends in a very great measure upon:

1. The loyal co-operation, knowledge, interest and ability of your employees.
2. The methods you pursue to secure co-operation, impart company business knowledge, create interest and reward ability.
3. The proper maintenance of track, rolling stock and schedules.
4. The quantity, character and timeliness of your advertising through newspapers, car cards or pamphlets.
5. Your heart and surface attitude toward your public.

One reason that the sale of street car rides has not kept pace with the strides made in the sale of any other commodity or service is that as a rule street railway companies (on the theory that they could not afford it) have not paid salaries sufficient to attract new, worth-while blood, or to hold their more progressive employees. This short-sighted policy is comparable to that of the merchant who curtails his advertising as his business declines, and then makes generous appropriations to the advertising department when he has more orders than he can fill.

If your case is a usual one, your receipts have not kept pace with your expenses. You need more car riders. You need more than the commonly termed necessity riding. Therefore you must be possessed of reliable and up-to-date records concerning your actual traffic conditions and the traffic possibilities which your system affords. Careful study of these records should precede your merchandising plans, which might well

be tried out on one route before a general application is made.

If you say to yourself that nothing more can be done to secure additional riders for your system your case is hopeless. No wonder you are not being paid more. You are probably howling and raving at the newspapers, the public, the commissions and your employees. Those methods will not sell car rides.

Finding out when, where and how people get to work and learning what it costs those who are not your patrons, in time and money, will form a basis for getting additional car riders.

It is true that you may not be able to adjust your service or rates of fare to get them all, but if for a starter you can get a few from each mill, factory, store or movie, that will be a great help.

The riding habit is a desirable thing to have your public acquire. They will acquire it if you are ever mindful of their desires, convenience and needs.

You must be not only a good mixer but you must use that trait to better your relations with your public. You must bear in mind that your employees and your public are entitled to their own viewpoints of your treatment or your service, and you must be able to visualize both sides of each question.

You must know that customers are sensitive. They go where they are invited and continue their patronage where well treated.

Your rides must be of a marketable quality. You must sell them in the size package for which there is a demand.

Business of all kinds is being built on the theory of giving the customer what he wants, or what he would want if he knew all the circumstances. It is your duty to give him what he wants, so far as possible, and to acquaint him with all the circumstances.

Service that suits your car riders—not you—is the service that counts in merchandising transportation

The success of any business depends upon the hearty co-operation of all the employees. It is impossible suddenly to get a perfect working force, and therefore a good working organization comes through the process of evolution and elimination.

To secure the co-operation of employees they must know and feel that they will always be squarely dealt with, that fair and impartial treatment will always be accorded them, due consideration being given to each contributing factor, and that merit, not influence, will win. This policy, supplemented by meetings at which the proper kinds of addresses are made and by thought

Notice to Trainmen

June 6, 1919.

Saturday, June 7,

Will be "Big Day" for all Beaver Valley Traction men.

Can you put it through without an accident of any kind? I believe that you can.

Keep cool. Don't get excited.

Romp on your gong and keep your car under control. Expect the other fellow to do just what he should not do. Watch the track ahead—watch crossings, both ways. Be all business this day—be polite—be careful.

I thank you.

Superintendent.

Bulletin No. 334

June 9, 1919.

Notice to Trainmen

We thank you, Saturday was a "big day." You did fine work. You handled an immense crowd of people. We knew you could get away with it. There was not an accident in which our trainmen were to blame.

True, there were three occurrences:

1. Windows broken by load on passing truck.
2. Car and auto in slight collision.
3. Rear of car 411 touched by yellow car at Iroquois Place, Beaver.

It was a hard day for everybody, and despite the three occurrences mentioned, we are inclined to rate it 99 1/2 per cent perfect for our own crews.

We expected a perfect score and you came very close to it. Accidents cost us a lot of money and it all comes from funds that should go toward operation and wages. You save funds for payment of your wages when there are no accidents.

We commend you for your careful work of Saturday and want you to make a perfect score daily your standard.

Superintendent.

Safety Engineer.

NOTICES SHOWING THE RELATIONS OF MEN AND COMPANY

Notices were sent to the trainmen telling about the "Big Day," and when it passed without accident the men were commended.

creating and correcting bulletins, should produce the desired results.

This is an everlasting job.

The knocker and the faultfinder are ever busy.

You must learn from all available sources causes of discontent. These sources may be secret as well as through your subordinates and employees' committee.

When causes are ascertained the remedy should be immediately applied, as it can be in most cases, for as a rule the cause is a trivial one.

Sometimes it is a hard matter to get the other fellow's viewpoint. You think of the days he has had off on full pay. He thinks of the overtime he has put in. You think of the enormous increase in his monthly wages. He compares the percentage of his increase with the percentage of increase that the laborer and steel mill worker has had. And so on to the dividing point if you and he don't get onto common ground and reach an understanding.

An understanding of how and why a good thing is done for him must be had by the average employee. He is naturally suspicious of anything "just handed to him." If you contemplate the presentation of a free

The presence of yourself and family is requested at the
 Beaver Valley Traction Company Employees'
Tenth Christmas Tree
 Junction Park Pavilion
 Tuesday Evening, December 21, 1920
 Ten o'clock p. m. to one o'clock a. m.
 DOORKEEPER WILL ADMIT _____ PERSONS ON THIS CARD

CHRISTMAS IS ALSO CELEBRATED

life insurance or health policy or the creation of a pension fund, your employee must be made first to understand the why and wherefore and made to desire earnestly that which you would give. To thrust such things upon him creates suspicion.

Employees desire a medium of expression. Some of them prefer their committee. Some make use of the suggestion box and especially prepared suggestion blank, while some prefer to give expression to their views and feelings in an interview with an official of the company. These safety valves must all be kept free and working.

No matter how small the system no one man is big enough or closely enough in touch with all the conditions to know it all.

If an employee makes a verbal or written suggestion, whether good or bad, a written acknowledgment of that suggestion must be made and the employee advised of the action taken or contemplated. If the suggestion is not considered applicable, a reason must be assigned. The next suggestion of that same employee may save you hundreds or thousands of dollars. However, the next suggestion will not be forthcoming if your employee has any reason to feel that it will not receive careful consideration. Make an appeal for suggestions on some specific topic. Make of your suggestion box a question and answer box.

Department heads, as well as the rank and file, must

Traction Company Employees Loan to Employers at Six Percent to Make Up Deficit

Movement First of Kind Ever Inaugurated in Valley by Public Service Concern—Some Offer Larger Amounts

Employees of the Beaver Valley Traction company and the Pittsburg and Beaver Street Railway company yesterday responded to a call for financial assistance to meet the deficit in operating expenses when each employee loaned the sum of \$10 from his semi-monthly pay, the first of four such payments, the total of which, with reduction of expenses, is expected to meet the immediate pressing obligations of the two companies.

General Manager W. H. Boyce, at three department meetings of the employees, said that the next four pays, of \$40 each, it would be possible to meet the situation for the next two months. Employees making the loans were assured that they would not only be given a receipt showing the payments but would receive interest at the rate of six per cent when the money was paid back during the months of June or July.

The movement is declared to be the first of the kind ever inaugurated by a public service concern. Several offers of larger amounts were made. These amounts ranged from \$50 to \$1000.

CLIPPING SHOWING WHAT THE MEN THINK OF THE MANAGEMENT

at all times co-operate. They are not co-operating if they are faultfinding and complaining of the methods in vogue in other departments. It should be distinctly understood that it is not only the privilege but the duty of the head of one department to take up verbally with the head of any other department any known condition which is not to the best interest of the company or its employees as a whole.

Misunderstandings will be cleared up and may be prevented through the medium of frequent individual and round-table meetings. However, little good can result from these department head meetings if a choleric, self-opinionated individual presides. He must be big and broad enough to weigh carefully any proposition advanced.

Deliver me from being a stock, bond or job holder on a property the head of which "knows it all."

He who surrounds himself with subordinates who never have an original idea and who if

4. Properly caring for those injured through no fault of their own.

5. Insistence that men be not reprimanded in public.

6. Advertisements directed to the public acquainting them with the difficulties a public service employee encounters in a day's work and asking their indulgence and co-operation. Be sure that your employees see these advertisements.

7. Keep employees' quarters or lounging rooms clean and attractive and fitted with amusement devices.

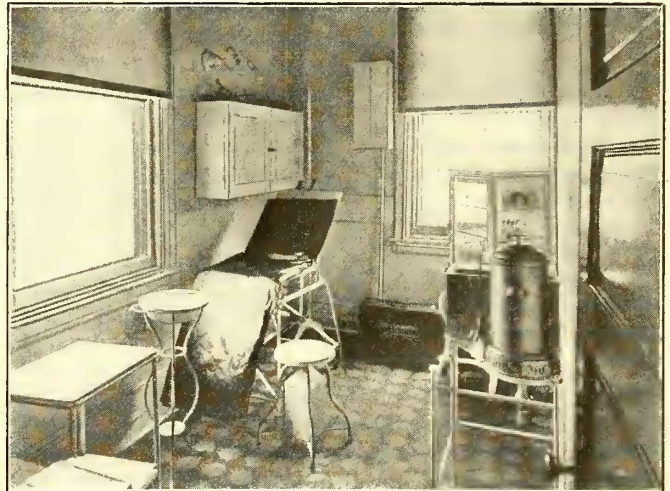
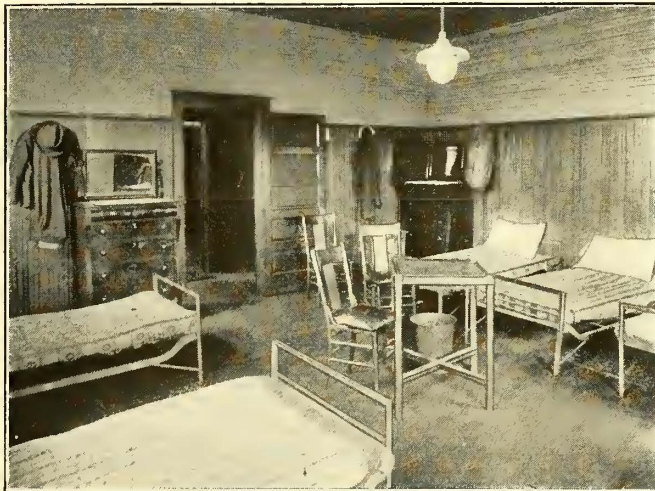
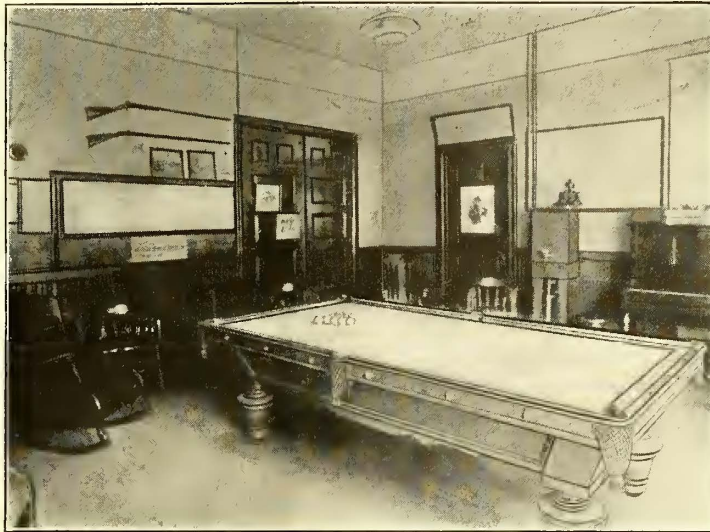
8. Provide loan fund to keep them out of the hands of loan sharks.

9. In individual cases that demand it, furnish free medical or legal advice.

10. Give time and consideration to an individual employee or a committee of employees.

11. Keep the door open and give them the benefit of the judgment of individuals of your staff on personal matters.

12. Keep them acquainted with financial condition of the company.



VIEWS IN THE MEN'S ROOMS; PREPARED FOR ALL THE NEEDS—RECREATION, REST, CURE

they do have one occasionally are fearful of the consequences of advancing it is riding to a fall. Of what use are subordinate officers who agree with each and every proposition advanced by the management?

Railway managers today don't need vanity ticklers or looking glasses. They need the services of cartoonists. The following will help to secure the good will and co-operation of employees:

1. Get-together meetings such as at a Christmas tree celebration or a field meet for employees and their families.

2. The serving of hot coffee at a predetermined minimum temperature and iced tea or lemonade on July 4 or other holidays or days of heavy traffic on which employees are compelled to work unusually hard or overtime.

3. Free lunch for employees working overtime during stormy weather.

13. Don't fail to give credit where credit is due.

The following statement is from a handbook given to each employee by the company with which the writer is connected:

To the unlearned and the one who will not take the trouble to find out, and the one who will not be convinced when shown the facts, the solution of the street car problem is always "Too much watered stock." They do not know anything about it. It is not a fact as applied to these lines.

Besides—

Organization of the company or the amount of stock issued has nothing to do with the service you are to give the patrons of this line. All people must at times have something to be dissatisfied about. Many people pick the street car company and its employees for expression of that dissatisfaction—that is to be expected. In days gone by street car companies would let them go ahead and not enter any protest, and as a result, in the way of the "bully" who displays his power over the weak, a great many contracted the habit. That very growing popularity of find-

ing fault with the street car company has forced that animal to back up against the wall and fight for his very life.

Now—

Exhausted in finance, and wilted by competition, the tables are turning and the day looms up that the people must respect the rights of the company or the burden of furnishing this popular method of transportation will fall upon each community to furnish or do without. Up to the time of going to press with this book, a total of 498 miles of track was abandoned in the United States in the year 1918 alone.

And—

in no case did the faultfinders come forth and supply adequate transportation—the lines remain dead; property values dropped to a small percentage and live wire citizens deserted the community, *for with the loss of the cars life was not worth while there.*

So long as the company pays your wages (and be it in your opinion a just or an unjust wage, it is the one you agreed to work for), your every act should be in the interest of this company and when *you find it difficult so to act, we will gladly grant you a permanent vacation without pay. We have so many others to contend with that each employee should help lighten our burdens and good will then result for both of us.*

Getting More Power Out of the Locomotive

AT A MEETING of the New York Railway Club held in New York on May 20, 1921, George M. Basford read a paper on "Vitalizing Locomotives." This is of interest to men interested in the development of the electric locomotive as showing what this machine is up against by way of competition.

As an example of the progress that has been made with the steam locomotive Mr. Basford cites a well-known road which has increased its average revenue tonnage from 400 to 1,700 per train in twenty-five years, the maximum revenue tons handled in a regular train being 3,200. This road shows 223 per cent increase in weight of trains and 66 per cent increase in speed in this period. It hauls 5,000-ton trains on 25-mile schedules. Taking the country as a whole the average revenue train load increased from 475 tons to 728 tons since 1915, an increase of over 53 per cent. Increase in capacity of the steam locomotive has been due particularly to the superheater, the brick arch, the feed-water heater and the booster. Since 1910 the railroads have applied 33,000 superheaters to new and old locomotives, about 90 per cent of the new ones having been equipped during the past few years.

For many years arches have been used in locomotive fireboxes, their functions being to baffle the gases and flame on their way to the flue. Arches protect flues and flue sheets, increase the heat-making capacity of the coal and reduce boiler failures. In present practice they are carried on arch tubes which not only support the arches but contribute materially to forcing the circulation of the boiler. More than 43,000 locomotives now have these arches.

The application of the feed-water heater to the locomotive has been attempted many times and has waited only for a practicable heater and pump. Europe is far ahead of the United States in applying feed-water heaters to the locomotive, although for generations stationary and marine steam plants have used them as a matter of course. They have, however, been in successful use on locomotives during the four years past, returning for reuse about 15 per cent of the exhaust steam in the form of distilled and filtered water. The result is an increase in tender tank capacity, while at the same time heat from the exhaust steam is returned to the boiler in the feed water.

The booster is an auxiliary driving equipment which boosts the train in starting and at critical points on grades. It utilizes weight and steam that are not needed for other purposes at low speed, the only speed at which the boost is needed. The booster works like an automobile in low gear; it applies its extra power smoothly, avoiding the jerks that a big engine otherwise must give in order to get started.

House Approves Commerce Estimates

Would Give Hoover Funds to Carry Out Plans, Among Them Study of Possible Furthering of Standardization

WHILE it took a special rule to do it, the House of Representatives has approved the supplemental estimates for the Department of Commerce, recommended by the committee on appropriations, for extending the export trade; for investigating structural material; for assisting in the establishing of industries developed by the war and for standardizing electrical and mechanical devices used in industries. What opposition existed was entirely on political grounds, but the attack did not have the backing of the Democratic leaders, however, as Representative Byrnes, the ranking Democrat of the appropriations committee, declared that it was not a question of politics; that the business and the general interests of the country demand the promotion and extension of our commerce, domestic and foreign, and that every possible aid should be given to the administration.

Representative Good, the chairman of the committee on appropriations, in explaining the feeling of the committee in regard to the appropriations for the Department of Commerce, said, among other things:

"Mr. Hoover realizes that conditions in the world today are such that it is going to take the very best men he can get as counselors and advisers to help advise American industry and American commerce how our trade with foreign countries can be extended and enlarged. I was unwilling and the ranking Democrat on the committee was unwilling and every member of the committee on appropriations was unwilling to take the responsibility for denying this appropriation." In supporting the Bureau of Standards items, Chairman Good said, in part:

"Secretary Hoover called attention to the fact that through the National Screw-Thread Commission the hardware dealers of America were saved a capital charge of from \$15,000,000 to \$50,000,000 on their stocks of bolts alone. Mr. Hoover is convinced that hundreds of millions of dollars can be saved if a standardization of hardware alone can be brought about. So it is in all of the industries. Mr. Hoover estimates that one of the big elements of increased cost is the great number of different standards that every dealer must carry.

"The Secretary has in mind to build up an industrial unit that will standardize these various items. It is a big idea. It is a big thing. The Secretary of Commerce has done big things. He will do big things in the future for the country, if we of the House can adopt a progressive, constructive policy upon which he can build. We have placed in the Department of Commerce one of the greatest engineers in America and we are going to support him."

The Plight of Vienna's Railways

Austrian Capital Has Little More Than the Ruins of a Once Efficient Transportation System—Lack of New Material, Worn-Out Equipment, Decreased Traffic and an Inflated Currency Make Recuperation Difficult and Slow

THE end of the war found the electric railways of Vienna in a position extremely difficult in several ways. The exigencies of the war have taxed both the roadway and the rolling stock of the lines to an unprecedented extent. While the population of Vienna and the traffic increased, means of transportation were reduced. The municipal steam-operated lines were to a large extent reserved for the transportation of troops, and the number of horse-drawn and motor vehicles diminished gradually. This produced a large influx of street car passengers. The street car lines played an important part in the Red Cross service, more than 1,200,000 wounded having been carried by them during the war. Many cars were adapted for ambulance work and were withdrawn from ordinary passenger traffic.

Moreover, the lines took a large, and during the war increasing, share in the goods transportation within the precincts of the city. Even under ordinary circumstances such strain would have resulted in a run-down condition of the whole system. The shorthandedness in the repair shops and the increasing use of substitute material have added to the extent and progress of the deterioration. The limited resources of copper were reserved solely for army requirements. Steel wire for the overhead lines and aluminum as a substitute for the copper conductors of the motors had to be used. Especially the lack of good quality lubricants tended largely to wear out the rolling stock, and indirectly also the rails. At the end of the war the difficulty of maintenance, instead of diminishing, had increased.

The disorganization of all Austrian industry following the armistice produced a more serious stringency of material than ever existed before. The general labor unrest seized the repair shops of the street railways, the efficiency of which sank down in a sharp curve. Progress of work was frequently interrupted by strikes. Cars were withdrawn from service in increasing numbers, and the workshops were clogged by accumulations of repair work. To such conditions was added the distressing shortage of coal. Vienna has lost its main coal resources by the armistice to Czecho-Slovakia. The present Austria has deposits of coal, chiefly brown coal, the exploitation of which had, however, been neglected in pre-war times, and was, although considerably advanced during the war, at the end of it entirely inadequate for the country's requirements. Political and financial conditions prevented the country from obtaining sufficient supplies from other sources. As a result, the traffic had to be reduced considerably, and at times came to a complete standstill for days at a stretch. At the beginning of the coal shortage, which made itself felt even in the last years of the war, the number of stops were reduced from 980 to 682, as a remedy. This resulted in an energy saving of 8 per cent. Later on, lines were put out of operation entirely or partly. Also, operation was reduced according to the coal at disposal, sometimes to seven hours a day.

This shortening of working hours seems to have given

the harassed management the necessary breathing spell for reorganizing operation and for making repairs. The difficulties had evidently reached their climax in 1919, and an improvement became apparent at the beginning of the subsequent year.

The basic factors of this improvement are the betterment of the coal supply and of the labor condition. Both have continued in a steady progress since then. The improvement of the system was, however, confined to narrow limits, not by the lack of efforts, but by the depreciation of the Austrian currency. The track mileage of the whole system has been increased since 1914 only by 7.5 km. (4.6 miles) to 274 km. (170 miles), 20 km. (12.4 miles) of which are operated by steam, the rest by electricity. All railroad terminals are now connected to the street-car system. For the new track, rails of the grooved-girder and the T-section type have been used.

For overhead conductors round copper wire of $\frac{3}{8}$ in. diameter has been adopted, in place of the wire of special section used before. The tendency is gradually to replace the steel wire by copper wire, as expenses permit.

SYSTEM OF RADIAL AND RING LINES INTRODUCED

Many changes have been made with regard to routing. The old-time cross-town routes, connecting widely distant parts of the city by a circuitous way, have dwindled down to fourteen. According to the layout of the city, the main traffic is now being taken care of by a system of forty radial lines, intersected by ring lines. Fourteen of such ring lines are now in operation, the inner circle being the ring street, the famous boulevard of Vienna.

The number of cars in use has since the beginning of 1914 been increased by fifty-six motor cars, up to 1,542, and by seventy-nine trailers, to 1,628. It speaks well for the enterprise of the management that with a few exceptions this increase was effected in post-war years, in spite of the enormously grown expenses, the price per car being now 2,500,000 kronen (\$6,250 as of May 18, 1921) compared with 25,000 kronen (\$5,075 normal exchange) before the war. All additions to the rolling stock are fitted with the latest improvements, the motor cars being of the double-deck type, with specially cushioned trucks. The platforms of these cars and those of the trailers are completely inclosed. The separation of entrance and exit, introduced in Vienna simultaneously with America, is rigidly adhered to. The mechanical equipment of the cars has remained unchanged. As a novelty may be mentioned the gradual replacement of spur gears by herringbone gears of the Maag type.

Experiments have been made with street-sweeping machines attached to the cars, the testing of which is not yet completed. For the housing of the cars, several sheds have been erected, three of which are of reinforced concrete construction, with sufficient space for

270 cars. To the street car system is connected a system of several motor-bus lines, to act as traffic conveyors to the terminals of the lines. One of these lines is of the trackless-electric type. The whole rolling stock of this service consists of 47 cars.

HEAVY FREIGHT TRAFFIC DURING THE WAR

The goods transportation of the system decreased, due to the stoppage of military transport. From 1914, when goods transportation on street railways was introduced, up to the middle of 1920, nearly 1,400,000 tons were transported. It might also be mentioned that the Vienna street railways played an important part in the American relief work for the Viennese children in the transportation of food, of which 511 tons were conveyed during the year June, 1919, to May, 1920.

The accidents showed a decrease. The following data are given in this respect:

	1919-20	1918-19
Accidents, total	6,012	7,400
Number of injured	466	635

Most of these accidents were caused by passengers jumping on or off cars while in motion. Accidents of this kind averaged 5 per 1,000,000 passenger-rides. Of the total, 1,308 accidents were due to collision with other vehicles, 520 to knocking down of pedestrians crossing the lines, and the rest to various other causes. Eight hundred claims for damages were brought in against the street car company, of which 560 were settled by agreement and the rest in court. The total damages paid during 1919-20 amounted to 1,044,000 kronen for personal injuries, and 200,000 kronen for damage to property.

The following is an account of the operation and the revenue for the year June, 1918, to May, 1919, and the same period 1919-20:

STATEMENT OF INCOME

	1919-20 Kronen	1918-19 Kronen	Per Cent Change
Passenger revenue:			
Single fares	485,354,465	154,043,771	215.1
Time tickets	16,166,657	3,552,878	355.0
Line tickets	9,449,570	1,906,862	395.0
Special cars	115,725	99,754	16.0
Freight revenue	1,204,496	928,423	29.9
Total	512,290,913	160,531,688	
Share in revenue of Vienna Steam Railway	1,865,473	650,586	186.7

TRAFFIC STATISTICS

	1919-20	1918-19	
Car kilometers:			
Motor cars	36,740,953	37,304,283	1.5
Trailers	48,990,656	50,494,731	3.0
Freight cars	1,301,250	1,176,212	10.5
Total	87,032,859	88,975,226	2.1
Kilowatt-hours used	40,641,939	43,256,667	6.0
Revenue passengers:			
Single fare	443,004,424	531,626,528	16.7
Time ticket	21,415,200	16,159,800	32.5
Line ticket	16,629,124	12,427,572	33.8
In special cars	446,715	498,767	10.4
Total	481,495,463	560,712,667	14.2
Number of parcels carried by freight department	21,156	30,156	29.8

NOTE—Figures in italics indicate decrease.

The highest daily receipts of the year 1919-20 were 2,700,000 kronen and the lowest 492,000 kronen, the latter on a day on which operation was reduced to seven hours.

The most incisive change with regard to the Vienna street railway system is the increase of the rate of fares. Before the war the fare was 0.14 kronen (2.8

cents) on weekdays, and the highest fare 0.20 kronen (4 cents) on Sundays. It is at present 5 kronen (\$1.02) on ordinary days and 7 kronen (\$1.42) on Sundays. As a peculiarity it may be mentioned that the fare to the Vienna racecourse, roughly 2½ miles from the center of the city, has been fixed at 30 kronen (\$3.09). For fares on late cars, running after the closing hour, chiefly for the connection between railroad terminals, 10 kronen (\$2.03) is charged. Blocks of tickets of five each, at a reduced price of 4.50 kronen (91.5 cents) instead of 5 kronen, can be bought in advance, as a convenience to passengers. A very large use of these is being made. For the working people, cheap tickets for 3 kronen each are issued, available up to 8 o'clock in the morning. Transfer tickets have been abandoned completely, and instead return tickets were introduced at 7 kronen, available for two rides over the same line in one day. Children's fares are 1.50 kronen (30.5 cents). These equivalents are in pre-war exchange. From the following list the movement of the fares can be seen:

Charges in Rates of Fare

Up to June 7, 1916	0.14 kronen (2.8 cents)
June 7, 1916-Aug. 28, 1918	0.22 kronen (4.5 cents)
Aug. 28, 1918-June 11, 1919	0.30 kronen (6.7 cents)
June 11, 1919-Dec. 3, 1919	0.60 kronen (13.4 cents)
Dec. 3, 1919-Feb. 18, 1920	2.00 kronen (40.6 cents)
Feb. 18, 1920-Jan. 27, 1921	3.00 kronen (60.9 cents)
Jan. 27, 1921	5.00 kronen (101.5 cents)

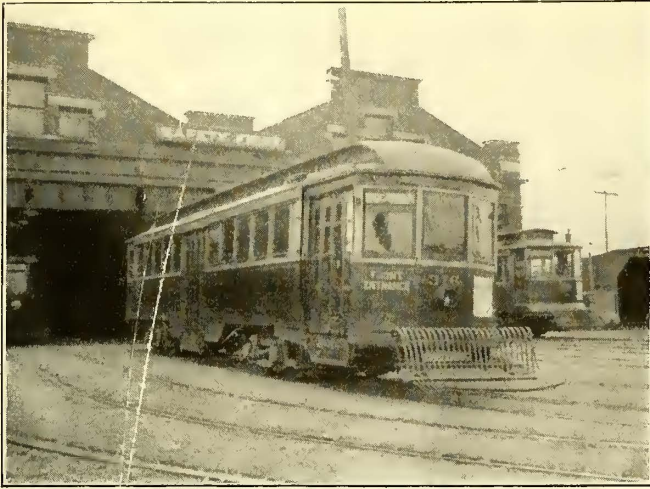
The rise of the fares was in each case followed by a sharp decline in the number of passengers. The experience was that after each drop of this kind a recovery set in, the number of passengers increasing steadily, and ultimately settling down somewhere in the middle between the highest and lowest point of the decline. The revenue did not, therefore, rise in proportion to the increase of fares.

No figures are available for expenditures, but the fact that the street car system, which is owned by the community of Vienna, is still needing a large subsidy, makes it evident that the revenue did not keep pace with expenditure. The following data indicate the ratio of increase of the main items of expenditure and of the revenue, and the relation in which both stand to the depreciation of the currency:

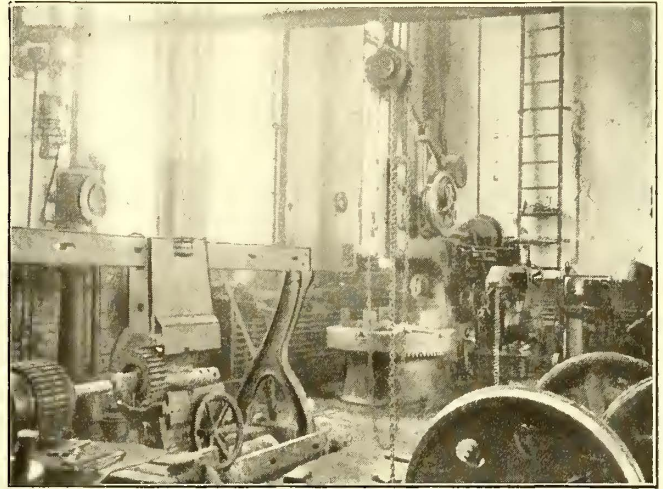
Depreciation of currency	1 : 127
Rise of rate of fares	1 : 35
Increase of wages	1 : 35
Increase in cost of new track	1 : 75
Increase in cost of rolling stock	1 : 100

REVENUE STILL MEAGER COMPARED WITH OPERATING COSTS

The increment of revenue is not even sufficient to offset the increase of operation cost. The enormously increased cost of maintenance stands, however, quite out of proportion to the present revenue. Although the strictest economy is observed, it is impossible to balance the expenditure. The street car system is a heavy burden on the already overstrained finances of the city, which is finding it very hard to supply the funds necessary for its upkeep. The State Treasury will, therefore, have to come to the rescue, if general conditions do not improve, but of this there is a fair promise. A marked betterment of trade conditions and industrial activity is also noticeable, and the town traffic is consequently picking up. If this improvement continues, the street car system will gradually get back into a healthier condition.



THIS VIEW PROVES THAT THE NEW YORK STATE RAILWAYS, UTICA LINES IS BEHIND THE SAFETY MOVEMENT



WORK IS A PLEASURE IN THIS BRIGHT AND CONVENIENT CORNER IN THE WHEEL SHOP AT UTICA PARK

Shop Notes from Utica

Some Kinks that Have Proved Useful Locally in the New York State Railways' Maintenance Work—Attention to Details Is the Particular Feature Which This Article Aims to Stress—Some Items Mentioned Are a Pinion Puller, a Paint-Spraying Outfit, Jigs for Reclaiming Worn Commutator Segments and a Heater-Coil Winder

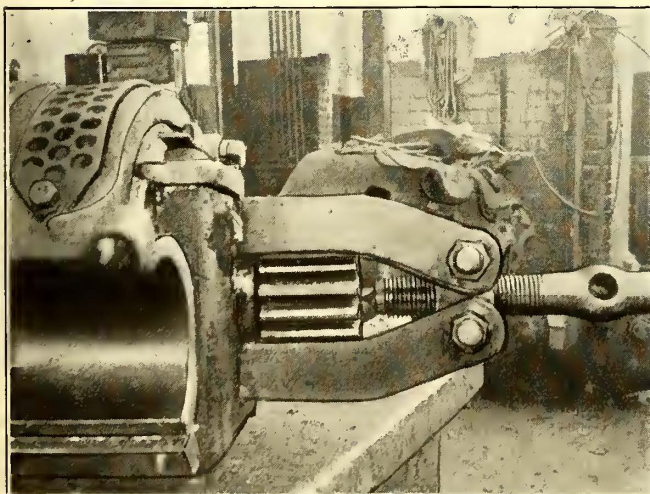
THE shops of the New York State Railways at Utica Park, Utica, were recently rehabilitated. The changes were covered in an article by H. S. Sweet, then master mechanic at this point, appearing in the issue of the *ELECTRIC RAILWAY JOURNAL* for March 20, 1920, page 567. Mr. Sweet showed how a few inexpensive changes had almost doubled the overhauling capacity of the shops. The shops are not only well laid out for their purpose, but in them a number of kinks have been developed which also tend to facilitate maintenance work.

A typical shop corner is shown in one of the photographs reproduced, which features a type of wall gip crane found very useful in the shop. It consists simply of a piece of T-rail hinged to the wall with a guy rod above. The T-rail boom carries a differential hoist,

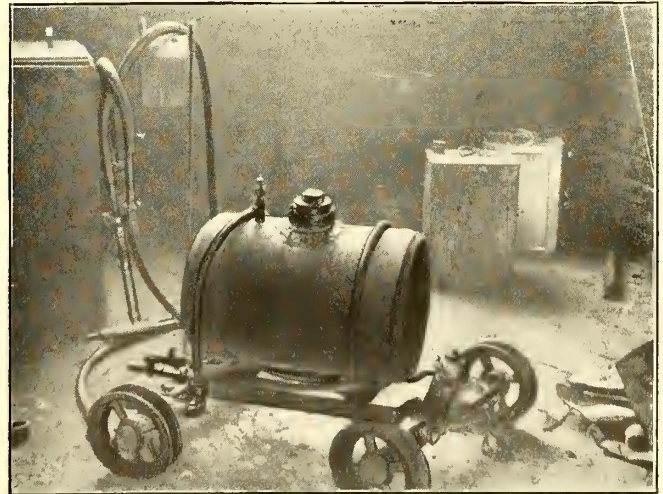
traveling on a trolley. This corner is in the wheel room and it contains the wheel press and boring mill conveniently placed to facilitate wheel and axle handling.

Another illustration shows a convenient pinion puller, consisting of two links made of steel straps which are hinged on a nut. Through the nut passes a threaded rod with pointed end for centering in the end of the motor axle. When the links are hooked over the pinion and force is applied, the links tend to bind tightly on the pinion and do not slip off. With this device pinion pulling is a very simple operation.

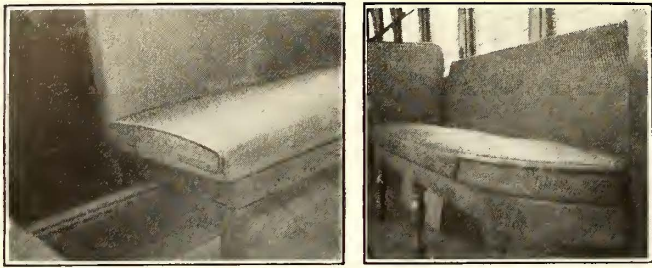
Another time and money saver is a pair of tools used in cutting down worn controller segments to render them available for reuse. The left-hand device shown is a clamp to hold the worn bars and acting as a saw guide during the cutting-off operation. A pin on the



A ONE-MAN PINION PULLER THAT WON'T SLIP OFF AS IT IS TIGHTENED



THIS QUEER LOOKING DEVICE IS A HOME-MADE PAINT-SPRAYING MACHINE



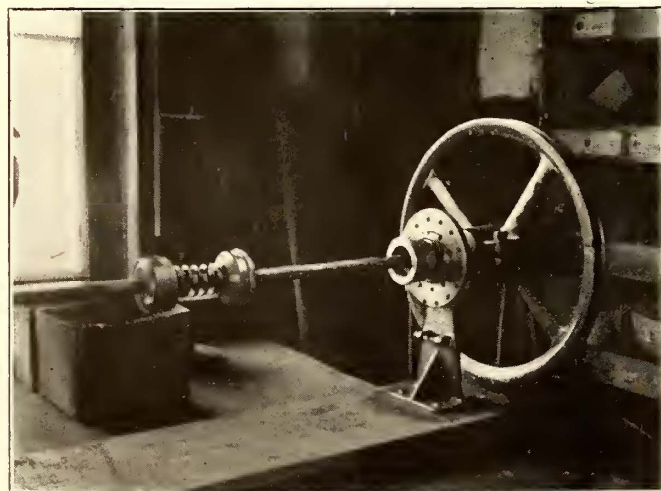
SEAT CUSHION GUARDS WHICH SAVE THE EXPOSED EDGES

inside of the clamping box, not visible in the picture, acts as a stop. The right-hand device is the jig for use in drilling. The construction is similar to the sawing jig except that the clamp is provided with a hardened bushing as a drill guide and there is no base, the device as it stands being very convenient for use in the drill press.

Another useful little device is a motor-driven winding machine, used for winding up heater coils on porcelain cores. The particular feature here is the provision for preventing breakage of the cores by excessive and irregular application of force in clamping. The spindle which carries the porcelain core is supported only at one end, which may for convenience be termed the headstock. At the headstock end of the spindle is a cup-shaped socket to receive one end of the core. The spindle also carries an adjustable clamp on which is mounted a second socket, attached to it by means of a coil spring. When clamped between the two sockets, the core is flexibly but firmly held to the spindle.

HOME-MADE PAINT-SPRAYING DEVICE IS USED IN UTICA SHOPS

As some spray painting is done in the shop, the portable spraying machine shown in another picture is found very useful. This consists of an auxiliary air-brake reservoir mounted on a tiny truck which rolls on old trolley wheels. Air pressure is applied to the reservoir to force the paint to the nozzle where it meets a stream of air supplied from the shop's compressed-air system. The nozzle used in connection with this device is also home made, consisting simply of a short straight piece of $\frac{1}{2}$ -in. gas pipe with another piece entering at the side, stop cocks being inserted in both pipes to control respectively the flow of paint and air.



A WINDING MACHINE FOR HEATER COILS WHICH DOES NOT BREAK THE CORES

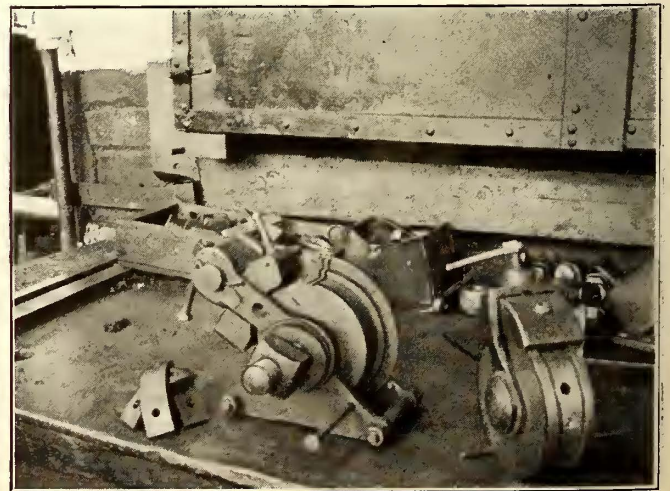
While not exactly a shop matter, the iron cushion guard, shown in two of the illustrations, will be of interest as a product of this shop. On account of the rapid wear of cushion edges exposed to use as foot rests, or located at points where they would be subjected to rubbing, the shop management bent up some $\frac{3}{4}$ -in. rods, flattened out the ends and drilled the resulting guards for convenient attachment to the cushion frame. The result has been a greatly increased cushion life.

The picture at the head of this article is a view taken in front of the carhouse adjoining the Utica shops. It features two items: The enormous safety-first sign, which reaches the eye of the motorman of every car entering the barn; the other is the car in the foreground, which is one of a number remodeled from the open type for front-end center-entrance fare collection. This car, as Kipling would say, "is another story," which was told in last week's issue.

A. S. M. E. Nominations

AT THE MEETING of the American Society of Mechanical Engineers, held in Chicago May 23 to 26, the report of the nominating committee was presented, which, although the nominations must be submitted to the society for letter ballot, may be assumed to represent the choice of the membership.

The list of nominations is as follows: For president, Dexter S. Kimball, dean College of Engineering Cornell University; vice-presidents, Col. E. A. Deeds, Dayton, Ohio; Robert Sibley, McGraw-Hill Company, Inc., San Francisco, Cal., and L. E. Strothman, Milwaukee, Wis.; managers, W. S. Finlay, Jr., New York City, to fill out Dean Kimball's unexpired term as manager, S. F. Jeter, Hartford, Conn.; H. P. Liversidge, Philadelphia, Pa., and Hollis P. Porter, Tulsa, Okla.; for treasurer, Major William H. Wiley, New York City, who has occupied this office for thirty-seven years. To represent the society on the board of the Federated American Engineering Society the following were nominated: Francis Blossom of Sanderson & Porter, New York, N. Y.; Charles A. Booth, Buffalo, N. Y.; Gano Dunn, president J. G. White Engineering Corporation, New York, N. Y.; H. H. Esselstyn, Detroit, Mich.; W. S. Lee, president Piedmont & Northern Railway, Charlotte, N. C.; I. E. Moulthrop, Boston, Mass.; John A. Stevens, Lowell, Mass.; A. E. Walden, Baltimore, Md.; Perley F. Walker, Lawrence, Kan.



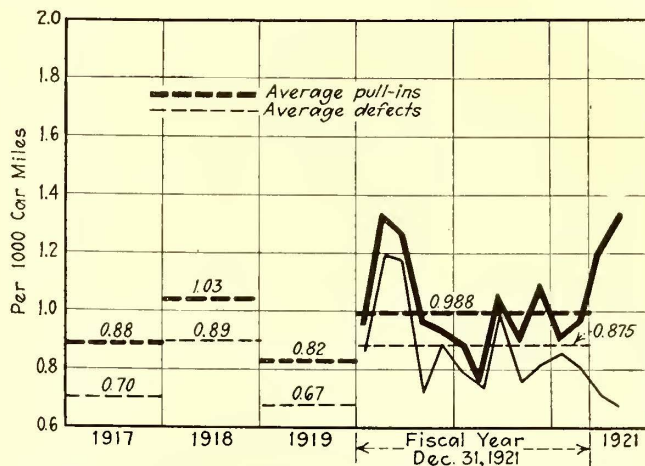
TWO JIGS FOR USE IN RECLAIMING CONTROLLER SEGMENTS

Master Mechanic Proves His Worth

Statistics of Pull-Ins and Car Defects Tell Graphic Story of the Efficiency of the Master Mechanic—
Graph Also Acts as Check on Transportation Department

ON A CERTAIN property, which must necessarily remain unidentified, statistics are kept and recorded graphically for each carhouse with reference to all pull-ins on the basis of number of pull-ins per thousand car-miles and corresponding records of defects are likewise plotted. Curves 1-a and 1-b were taken on this property and indicate graphically the efficiency of a certain master mechanic, "A," who was in charge of both houses. In connection with these two graphs, graph 2 should also be noted, because this is the property to which this particular master mechanic transferred when he left the former property. At the end of 1917, which, as noted, showed a very small number of pull-ins, master mechanic "A" left property No. 1 for a better opportunity at property No. 2. The year 1918 shows a record of pull-ins which is extremely high, and at the end of this year master mechanic "B," as he may be called, was removed to make a place for some one who might have an opportunity to make a better record. Master mechanic "C" was then installed and his record for 1919 speaks for itself, indicating him to be an efficient man. At the end of this year, for some reason, his services were no longer available to the company and he was replaced by master mechanic "D." New equipment was installed in carhouse *a*. The immediate rise in the pull-in curve of carhouse *b* is dramatic, and it is pertinent at this point to say that master mechanic "D" was relieved from his duties when this curve reached its peak, master mechanic "E" then coming on and making his presence felt by the immediate drop in this curve.

Returning to master mechanic "A," he entered the employ of the second company at the beginning of 1918. Graph 2 is the record of the principal carhouse of his division, and it is seen that the year 1918 shows a low pull-in record as compared with the previous 1917 record for this house, and that 1919 shows a still lower record. In 1920 this man was promoted to another position in this company, and that the loss of his immediate presence was felt by the division from which he



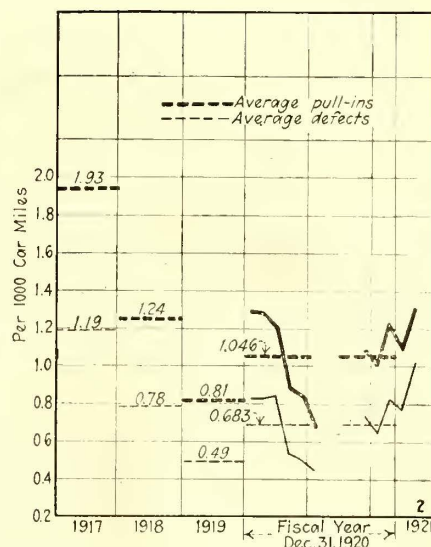
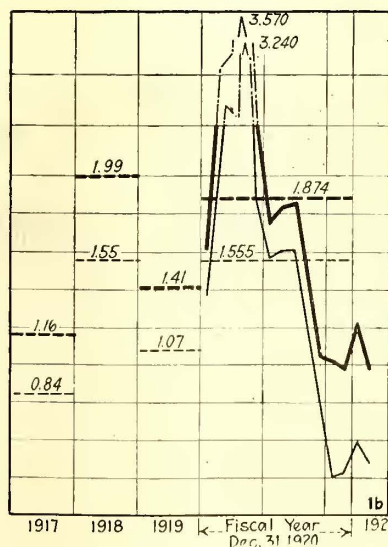
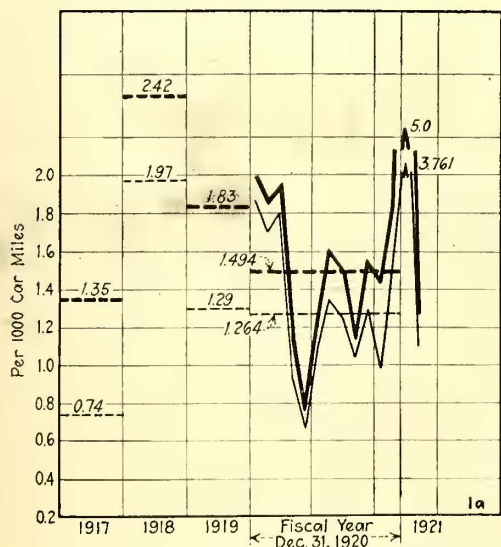
GRAPH SHOWING SPREAD BETWEEN DEFECTS AND PULL-INS AS A CHECK UPON TRANSPORTATION-MECHANICAL DEPARTMENT CO-OPERATION

moved is apparent from the graphical analysis of the pull-ins and defects.

TRANSPORTATION DEPARTMENT ALSO CHECKED

This method of keeping track of these two records of rolling stock also gives an opportunity to note the co-operation which exists between the transportation and mechanical departments. Theoretically, of course, the number of defects per thousand car-miles should coincide with the number of pull-ins per thousand car-miles; in other words, best operation by the transportation department would mean that there should be no pull-ins without cause.

The general management which operates this entire group of properties from which these curves are taken uses this as a basis of check-up on the transportation department with good results. In the single graph shown independently it is noted that toward the end of 1920 the spread between pull-ins and defects commenced to increase to alarming proportions, indicating a very large number of pull-ins where there was no defect. A new superintendent of transportation has been installed on this property with results which the management says amply justify its decision that this spread was due to poor supervision in the transportation department.



GRAPHICAL PORTRAYAL FROM TWO COMPANIES, SHOWING EFFECTIVENESS OF A MASTER MECHANIC WHO PROVED HIS WORTH

Motor Vehicles Must Pay Their Way

Commissioner of Highways of State of Connecticut Says Traffic Benefited by Highway Improvement Should Bear the Cost

AT A NATIONAL highway and traffic conference held at Yale University on May 23 the subject of traffic regulations in streets and on highways was discussed by several prominent leaders. Papers were presented by William Eno, honorary president of the Highway Traffic Association of the State of New York; William J. Bennett, Commissioner of Highways, State of Connecticut; Dean A. N. Johnson, department of engineering of the University of Maryland; Miss Harriet E. Beard, Department of Education, Detroit, Mich., and James W. Inches, Commissioner of Police, Detroit, Mich. There was a general recognition of the increasing problems of regulation of highway traffic and the need of leadership in this line of work. Mr. Eno outlined various traffic regulation schemes which have been placed in operation in various cities all over the world, in order to expedite the traffic. Miss Beard discussed the educational work which was being done in the schools of Detroit with a view to reduction of accidents in traffic. Dean Johnson discussed largely highway construction, and Mr. Inches the Detroit traffic regulation system.

Commissioner Bennett pointed out that there must be somebody, some central organization, to standardize practice and to lead. A highway administrative engineer, he said, must be a student of transportation rather than a technical expert of highways. He must study all kinds of transportation to see how the highways fit into the general scheme and how they should absorb their part of the load. He pointed out that at present there is an overdevelopment of highway traffic in proportion to the total, due largely to the overdevelopment of the vehicle which is used for highway transportation. In other words, there has been a short-sighted direction of capital in so far as the best benefit for the whole public is concerned. Funds have been devoted to the development of a vehicle and thus have not been available to the increasing of necessary rail facilities.

He showed that there are two classes of highway traffic, the first commercial, the second passenger, and that highway construction which will take care of the first will naturally take care of the second. Connecticut itself is in a peculiar situation, for, according to the manufacturers of motor vehicles themselves, 125 miles is the maximum of economical motor vehicle transportation of freight, and Connecticut lies in such a position geographically that it is within this limit of both Boston and New York.

Some of Mr. Bennett's figures are of great interest. Figuring the total cost of operating a certain type of motor truck in Connecticut as \$26.09 per day, 11 cents of this is state tax. If the relative cost of operating this truck on dirt roads and on a hard, smooth surface, such as the state provides, is taken into consideration, it is figured that there will be about \$3 saved in the day's expense by operating on hard smooth roads rather than on dirt roads. If this is turned into a license fee, as is logical, since this is the benefit derived from having the state construct a road, then the fee would be \$750 per year compared to the present \$27.50, figuring a 250-day operation in the year. In Connecticut particularly there is slight local benefit due to hard sur-

face roads, so that traffic which uses the road should bear the cost.

The commissioner said he was not prepared to divide the cost between the two classes, but that a definition was desirable. He did state as a much-emphasized fact that the state should not subsidize commercial traffic on highways, but that it should get enough in fees to pay for the cost of rendering the service to this class of traffic. Commercial traffic on the highways is here to stay and it should pay for the extra service which is given to it.

As to the maximum load which could be carried on motor vehicles, the commissioner was not prepared to say, except that his own view was that 28,000 lb. gross was the greatest load that should be allowed upon improved highways. Of course, it would be physically possible to build a highway for any load, but some economic limit must be set and highways built to that limit. Connecticut now has a new bill, which will probably be passed shortly, the commissioner said, which will limit the truck to such a weight and will also prescribe the weight per inch width of tire and make other regulations as to division of load between forward and rear ax'es.

Changes in the Cost of Living Since 1914

THE National Industrial Conference Board, New York, has issued another report on cost of living, based on its own figures for retail prices of clothing, furnishings and fuel and the index numbers of the United States Bureau of Labor Statistics with regard to food.

The total increase in the cost of living from the beginning of the war to March, 1921, the investigation shows, was 68.7 per cent. The rise in the cost of the major items of the budget of wage earners between July, 1914, and March, 1921, is estimated to have been as follows: Food, 56 per cent; shelter, 71 per cent; clothing, 74 per cent; fuel and light, 87 per cent; sundries, 85 per cent.

Since July, 1920, the total cost of living has decreased 17.5 per cent. Food has decreased 29 per cent, clothing 35 per cent, while shelter has increased 8 per cent and fuel and light 13 per cent, no change having taken place in the cost of sundries.

Since the beginning of last November the total cost of living has decreased 12.6 per cent, food showing a 19 per cent decrease, clothing a 23 per cent decrease, fuel and light a 6.5 per cent decrease and sundries a 4 per cent decrease.

Electrified Track Switches

WHEN a railway system has more than 40 miles of track and operates between sixty and seventy cars it is either fortunate or very capable in being able to route its cars so that there are only eight switches on the entire system which have to be used in normal operation. Such, however, is the situation on the Little Rock Railway & Electric Company's system in Little Rock, Ark.

Of these eight switches, two have been electrically operated for some time and four are now being equipped with Cheatham switches. The other two may also be equipped in the near future. The management believes, even with the small number of switches it has to operate, that it pays to use electric switches both from a time-saving and a safety standpoint.



THE MONEY BOX IS CHAINED TO THE CHASSIS OF THE TRUCK

Memphis Cash Wagon Defies Hold-Ups

Ford Truck with Triple Locked Strong Box Used to Carry Daily Receipts to Bank, Some Distance Away, in Memphis—Saves Money Over Previous Method of Handling

ACCOMPANYING illustrations give a good idea of the method now employed by the Memphis Street Railway to transfer its daily receipts from the company's headquarters to the bank. As noted, the cash wagon consists of a Ford chassis with a specially constructed heavy truck body, on which truck is placed a very heavy two-compartment iron box built from boiler plate. This iron box is chained to the truck by a heavy log chain, which is securely padlocked to the sides of the chassis. The box has a lower and an upper compartment, each of which is equipped with an iron door, which is padlocked shut. The actual cash is placed in smaller iron box containers about 8 in. x 12 in. x 16 in., which are also padlocked shut. These latter containers are equipped with a sort of harness or carrying hammock with handles so that two men can easily carry one of them.

When the truck is loaded with its daily receipts, all padlocks are locked and keys are left in the cashier's office. Three men accompany the truck on its trip to the bank, some distance away from the office, which is at the carhouse out on the system. Another set of keys is kept at the bank, so that the men on the wagon do not have any keys to any of the locks.

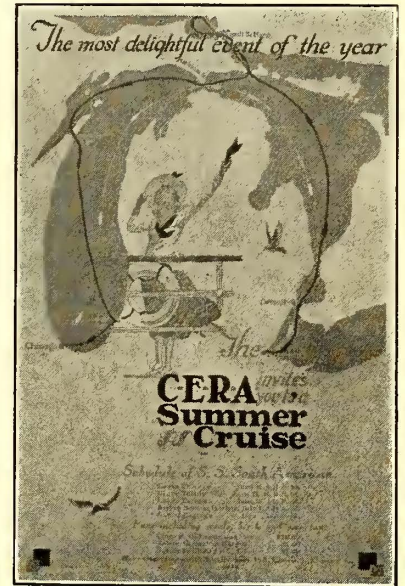
The former method of handling this transfer of cash daily in Memphis was to have two men assigned to each of these small iron cash boxes, the whole group of men being sent to town on a special street car. This was

naturally not economical in the use of men's time, for ten boxes needed twenty men to transport them. The company figured that there is a saving of at least \$3 a day by the present method over the former one.

All Aboard for the C. E. R. A. Summer Cruise

THE Central Electric Railway Association committee on arrangements is trying some publicity within the industry in connection with its summer cruise. The accompanying illustration shows one of its 5-in. x 8-in. poster cards announcing the schedule of the SS. *South American*, which leaves Chicago at 8:30 a.m. on July 26, leaves Toledo on the return trip at 10 a.m. on July 28 and arrives at Chicago at 1 p.m. on Aug. 1.

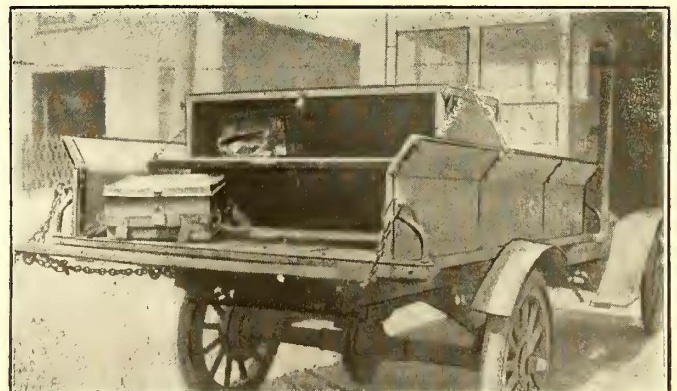
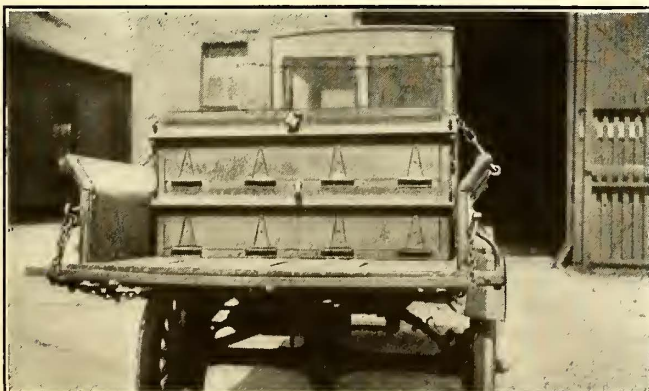
On the reverse side of this card is a long list of names signed under the motto "We will see you on the boat." The Central Electric Railway Association wants all railway men to take advantage of this summer cruise, the ladies also being welcome. A good program is promised. Reservations are in the hands of John Benham, secretary of the association, 15 South Throop Street, Chicago, Ill.



C. E. R. A. POSTER

"Movie" as Publicity Agent

Many stockholders of the Chicago Railway Equipment Company and their friends were guests of the company recently at an educational film show given at the Woman's Club in St. Louis. More than 6,000 feet of film descriptive of the company's activities made up a portion of the serious part of the entertainment. Originally the company began in St. Louis with one plant, started in 1888. It now has headquarters in Chicago and five subsidiary plants in the East. E. B. Leigh, president of the company, presided and explained the motion pictures.



TWO VIEWS OF THE MEMPHIS CASH WAGON, SHOWING VARIOUS DETAILS

Simple Inspection Method and Record for Small Shop

Adequate System of Keeping Inspection Records Used by the Madison (Wis.) Railways Reduces Amount of Writing or Clerical Work to a Minimum and Without Burdening the Files

A VERY simple though adequate system of keeping the inspection records is used by the Madison (Wis.) Railways. The condition of each car is reported by the motorman who brings it in, and this report is checked by the shop foreman. Most of the trouble reported is taken care of by the night foreman, who also arranges to keep the bad-order cars in the shop during the following day, reporting their condition to the master mechanic. Outside of bad-order reports,

day and turned in to the master mechanic. This record of work done on all cars for the day is then transcribed in the office on an identical card made out individually for each car for the permanent record file. On this the numbers 1 to 30, representing the days of the month, are written in the left-hand column instead of car numbers.

Each card as made up in the form reproduced herewith thus shows at a glance the inspection record for the month of a certain car, the number of which appears in the upper right-hand corner. Thus by inserting in the left-hand column the numbers of cars on which work is done, or the days of the month, the card becomes a record of the inspection for the day on all cars or the inspection for the month on one car. The simple straight-mark system for recording the kind of

17						19						21						32						DATE FEB 1918					
BODY	FLOOR	STEPS	WINDOWS	DOORS	SEATS	WHEELS	JOURNALS	GEARS	TRUCK FRAME	BRAKE CHAINS	BRAKE RIGGING	BRAKE SHOES	TROLLEY WHEEL	TROLLEY STAND	CONTROLLERS	MOTORS	MOTOR-PINION-BEARINGS	SAND	FENDERS	STOVE	LIGHTS	TROLLEY CATCHER	ELECT. BELLS	SCRAPERS	LANTERN-FUSE-LAMPS	HEADLIGHTS	RECORD OF CAR NO. 67		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	169	
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	160	
3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	71	
4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	169	
5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	178	
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	53	
23	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	27	
24	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	142	
25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	169	
26	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	Rept. trolley rope 142	
27	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2 new shoes 134	
28	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	160	
948																													

INSPECTION HISTORY OF ONE CAR FOR ONE MONTH AS KEPT BY MADISON RAILWAYS

the cars are taken in for inspection, adjustment or overhaul in rotation, depending on the mileage operated and the lapse of time since the last inspection. The period of inspection is left to the discretion of the master mechanic, who has full knowledge of every condition.

Owing to the small size of the shop the company does not make use of a printed form of shop order, the master mechanic simply making a pencil report of cars to be inspected and for what cause.

The record system on the inspection work is kept on a 9 3/4-in. x 11-in. card having the divisions of the inspection work printed across the top of the card, together with the account numbers for the several groups, and a key to the inspection record marking at the bottom. Any work done on any car, whether by order or not, is recorded on one of these cards, opposite the car number written in the column at the left-hand margin. A card made up in this manner, with the numbers of all of the cars on which work has been done appearing in the left-hand column, is used each

inspection done reduces the amount of writing or clerical work for the shop man to the minimum. The monthly record for each car gives a sufficiently complete record without too much clerical work and without burdening the files.

New Insulating Varnish

A BLACK insulating varnish, characterized as "General Utility Inco Insulite No. 16," has recently been placed on the market by the International Paint Corporation of St. Louis, Mo. After baking, this varnish produces a hard, semi-flexible, jet-black lustrous coat, possessing a high dielectric strength and electrical resistance, excellent binding and cementing qualities, and practically moisture, acid and alkaline proof. It will air-dry in thin films in from two to four hours at room temperature. When air-dried it produces a semi-gloss black coat more flexible than when baked. It does not, however, have as high dielectric or mechanical strength or as high electrical resistance as when it is baked.

Old Ties Make Good Fence Posts

IN SOME of the recent track reconstruction work in Atlanta it was necessary to take out some old ties, most of which had been gained down by the rail, but were in good condition chemically and physically. Most of these ties have been in the ground for more than twenty years without suffering anything else than physical wear.

Not wishing to scrap good wood like this, it was found that these ties could be made into very good fence posts, used for blocking, and these uses have been made of most of the ties removed.

Magnetic Grounding Block

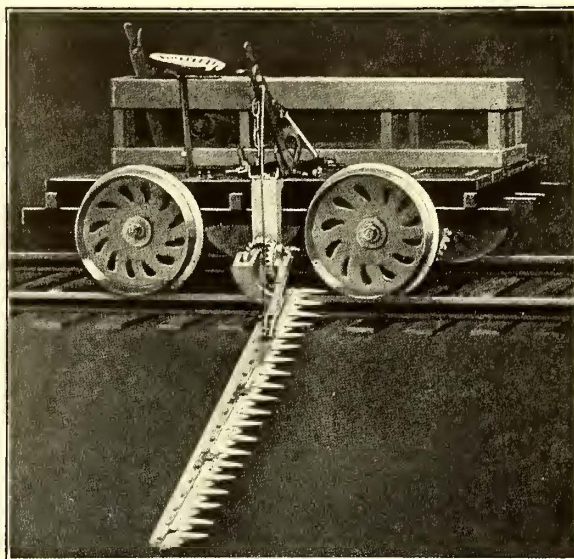
A DEVICE has been developed in England for the purpose of making a good temporary earth or ground connection for track welding and other purposes. It consists of a substantial electro-magnet, provided with carrying handles, the winding being energized with current drawn from the rail. The attraction between the magnet and the rail provides a firm electrical contact between it and the terminal of the electric winding. The device is made by the Equipment & Engineering Company, London.

Mowing the Weeds Along the Tracks

A TRACK mower consisting of an ordinary cutter bar, sickle and driving mechanism which may be attached to any motor, hand or push car and operated by the section men has been placed on the market by the Rawls Machine & Manufacturing Company of Chicago. This mowing device enables the maintenance men to keep the right-of-way well cropped of weeds along either side of the track throughout the summer at a small expense. A cutter bar and sickle from 5 to 7 ft. long is used and is said to negotiate irregularities in the ground without any trouble. The position of the cutter bar is controlled by a hand lever on the car and handled by one man. It is claimed that grass and weeds may be mowed while the car is driven at a speed of 7 or 8 miles per hour. If any obstruction is seen the sickle can be raised to pass over it, and should the obstruction be overlooked there is an automatic feature which protects the sickle from breakage.

The advantage of this device in sections where the grass and weeds grow rank and high along the side of the track and lop over the rails, making them slippery

and dangerous and reducing the normal tractive effort available, is obvious. It is claimed for this track mower that it not only leaves the cut surface smoother than is possible with a hand scythe but it distributes the cut



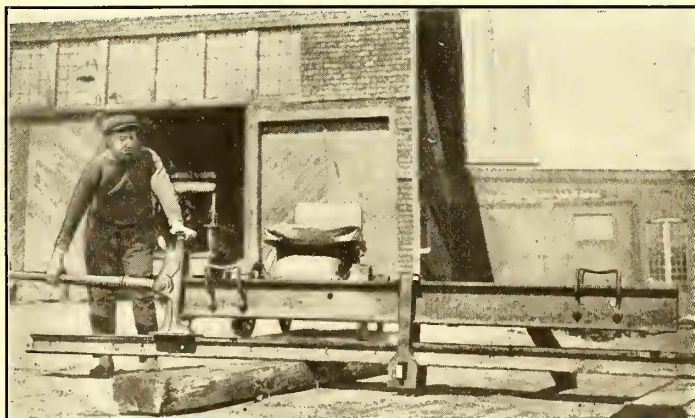
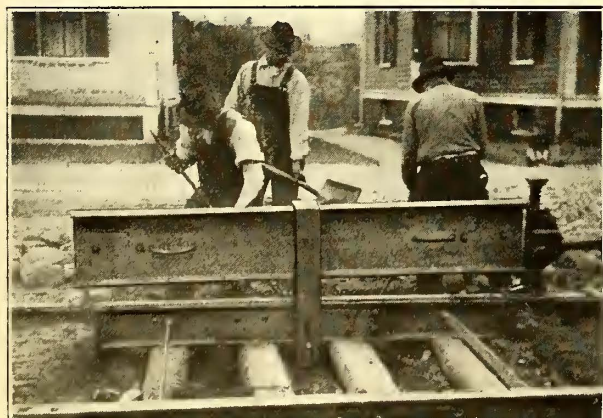
TRACK MOWER ATTACHED TO SPEEDER

grass and vegetation evenly so that after it has dried the whole surface may be burned over, thus destroying in large measure the stubs and roots beneath and damaging the grass beyond the swathe of the mower.

Vertical Rail Benders

AN ACCOUNT was published on page 809 of the issue of this paper for April 30 of the device used by the Eastern Massachusetts Street Railway for bending up the ends of rails at low joints. Two sizes of benders are used. One is made up of a 15-in. I-beam and is used for heavy work, such as with a 9-in. 104-lb. girder rail. The jack used with this bender is of 30 tons capacity, and a line drawing of this bender was given in the article mentioned. In addition the company has a lighter bender, made up of a 9-in. girder rail and used with T-rails up to 75 lb. in weight. This is also a home-made device.

Through the courtesy of Frank B. Walker, engineer maintenance of way of the company, illustrations of both of these benders in use are given herewith.



AT LEFT, FIFTEEN-INCH VERTICAL RAIL BENDER IN USE. AT RIGHT, NINE-INCH RAIL BENDER USED WITH LIGHT RAILS

Association News

Another View of the Coal Situation

J. W. LIEB, Jr., chairman of the fuel supply committee of the Joint Committee of National Utility Associations, which represents the American Gas Association, the National Electric Light Association and American Electric Railway Association, has received from George Otis Smith, Director of the United States Geological Survey, a letter on the coal situation which is of particular interest to electric railway men. Mr. Otis answers certain questions asked by Mr. Lieb, giving the benefit of the Geological Survey's statistical stock-taking as to coal. He urged the importance of stabilizing the coal market, and stated that April 1 data showed the public utilities to be in a strong position regarding stocks of coal. Continuing he wrote, in part, as follows:

At the present rate of consumption the electric utilities canvassed had on hand as of April 1 a supply sufficient for six weeks, six days' operation, and for the coal-gas plants the supply was enough for nine weeks, three days. As to what the public utilities have been doing since April 1 we have no knowledge. It is clear, however, that consumers as a whole have depleted further their reserves. The country is still coasting on its reserves.

Clearly the public utility operator has everything to gain and nothing to lose by continuing to maintain his reserves. It is increasingly plain that the condition of consumers' stocks has a very profound bearing on the coal market. When a man has a large stock he can wait for favorable terms. When his stock is small he has to buy. If something happens to interrupt the orderly flow of coal from mine to place of use he has to buy emergency coal. Now when stocks are generally low a sudden interruption to supply—a blizzard, a switchmen's strike, a traffic jam—finds many consumers unprepared and drives them to enter the spot market. That is the time when a well-stocked coal bin pays for itself. The plant is equipped to withstand a siege.

We do not know enough about stocks as yet to be quite sure what constitutes a safe supply, but if we are willing to learn from experience we can hardly escape the conclusion that a stock of less than 30,000,000 tons is not sufficient to meet a severe winter with business active. The country entered the winters of 1916-17 and 1917-18 with about 28,000,000 tons in storage and in neither winter was the lot of the coal consumer a happy one. Again in the summer of 1920, when stocks fell to 20,000,000 tons, a runaway market developed. On the other hand, in normal times a stock of above 40,000,000 tons seems to be sufficient and it is significant that the coal market did not tranquilize itself in 1920 until the above-ground reserve passed that figure. A difference of ten or fifteen million tons, the margin between a safe reserve and an unsafe reserve, does not appear much; it is no more than a week's production at the maximum rate. In fact, however, this small amount is great enough to change the tone of the market.

There is a sort of critical level of stocks—a critical anchor-ice temperature, to borrow a phrase from hydro-electric operation. Exactly what the critical level is we cannot say until we have been keeping records longer, and of course it would be lower at a time like the present with business depressed and consumption low than in a time of active business. But we can say, I think, that the critical level lies somewhere between 30,000,000 and 40,000,000 tons; and that when stocks are much above that level we have a "buyers' market." Let them fall much below it and we have a "sellers' market."

As to the present level of stocks the Geological Survey's inventory showed that on Jan. 1, 1921, it was not more than 48,000,000 and not less than 42,000,000, say about 45,000,000 tons. By April 1 stocks had dropped to somewhere near 37,000,000 tons, and since then they have doubtless decreased further. In other words, while we can tell

from the tone of the market that the critical level has not yet been touched, it is plain that stocks are fast approaching it, and that it would be unwise from the consumer's point of view to let them sink much lower.

The question as to the danger of a congestion of transportation should the public long delay the purchase of coal has been answered by the railroads themselves. If business does not revive and we continue to burn coal only at the present rate there is no reason to fear car shortage; for consumption is much below the pre-war level, and prior to the war our transportation system had no serious difficulty in handling the coal offered, even with the peaks and valleys of seasonal variation in demand. In those days, however, the country needed less than 500,000,000 tons of soft coal a year. Now our requirements, with business reasonably active, are in the neighborhood of 530,000,000 tons. There has been no corresponding growth in the capacity of the railroads to transport coal, and on the three occasions when we have called upon them to haul 550,000,000 tons of soft coal in a single year the carriers have shown signs of distress. In 1917, 1918, and again in 1920, years in which the output of bituminous coal exceeded 550,000,000 tons, the carriers were able to handle the burden only by being relieved from the responsibility of carrying other types of traffic. As Mr. Gutheim, of the American Railway Association, has pointed out, "Our railroad facilities are probably adequate today to handle our necessary annual bituminous output, if produced with fair uniformity of rate throughout the year, and will certainly be adequate when post-war rehabilitation of the properties is completed. Our railroad facilities are not and without great waste of investment never can be adequate to handle currently our necessary bituminous coal production when obtained by weekly peaks of 13,000,000 tons and valleys of 7,500,000 tons in a 12-month period, as has been the case in the past two years." If Mr. Gutheim is right the need for buying early and taking coal while it can be had will be with us for some time.

But what, it may be asked, is the use of a public utility storing coal when other consumers are not? How can the tonnage stored by even all the public utilities stabilize the market if other consumers are holding off and burning up their reserves? The answer is that a reserve is never likely to be needed so much as when other people have none.

To offset this sense of security which comes from a large reserve what can the public utility manager gain by delay? To the layman it would appear that no time could be so favorable to bargain as now, when the coal industry is seeking a market for its output. There are three important elements in the cost of coal laid down at the consumer's door which may conceivably change before long—the wage scale, the freight rate, and the operator's margin. So far as the first two are concerned the purchaser should get the benefit on all coal delivered after the reduction. So far as the third element is concerned the public utility must decide whether the coal man is likely to accept any smaller margin later when demand is active than now when the market is dead.

With adequate stocks, however, the public utility is and will be in a strong position to buy whatever the level of costs and whatever the market position of other consumers. The public utility cannot shut down, and the public must pay for the coal the public utility buys, hence from the public standpoint the double function of large stocks: to keep up service and to keep down prices.

Joint Meeting at Hartford

A SUCCESSFUL meeting of the Connecticut Company section of the American Electric Railway Association was held jointly with the New England Street Railway Club at Hartford on May 18. This was the thirty-ninth monthly meeting. Among the speakers were I. A. May, comptroller the Connecticut Company; E. Irvine Rudd, engineer Connecticut Public Utilities Commission; N. J. Scott, manager Hartford Division Connecticut Company; Edward Dana, president New England Street Railway Club and general manager Boston Elevated; W. J. Flickinger, vice-president Connecticut Section New England Street Railway Club and assistant to the president the Connecticut Company; Richard E. Higgins, chairman Connecticut Public Util-

ities Commission, and L. S. Storrs, president the Connecticut Company. The general features of the joint meeting were reported fully in the issue of the *ELECTRIC RAILWAY JOURNAL* for May 21.

Owing to a reduction in printing costs the association office can now supply the booklet "How You Used to Ride" at \$7.50 per thousand copies. This is the cost price, and the price may be still further reduced if the demand warrants.

Letters to the Editors

Maintenance Cost on a Car-Weight Basis

BROOKLYN RAPID TRANSIT COMPANY

BROOKLYN, N. Y., May 28, 1921.

To the Editors:

David Harum said "a reasonable amount of fleas is good for a dog"; so a reasonable debate on the effect of car weight on track maintenance may not be out of place. The article by J. C. Thirlwall in the April 16 issue of the *JOURNAL* and subsequent correspondence has created no little interest among track engineers. In the article in the issue for April 30 Mr. Thirlwall evidently does not differentiate his estimated track maintenance costs between city and interurban properties. There is a wide range in maintenance of tracks in these two situations, and in city tracks where paved about 35 per cent of the maintenance cost is for pavements.

The safety car is used almost exclusively in cities where the tracks are paved. Meanwhile there is a large percentage of the pavement maintenance cost which is due solely to the wear and disintegration of the pavement. These are not caused by the passage of the car, no matter of what type it may be, but are only due to use by public vehicles.

As Mr. Thirlwall says, "engineers will disagree as to the effect of car weight on track maintenance," and I venture to be one of the "disagreeers." We do not have sufficient cost data to enable us to determine what it costs to maintain our tracks now, whatever the equipment may be, and I wish to be in opposition to the use of estimates unless the latter have more and better records of actual costs upon which to base estimates of the influence of car weight.

The safety car will continue to sell itself to the railway companies without need for using supposed lessening of track maintenance as an argument. Further, the writer believes that the actual axle load, plus impact, as found with the safety car, does not fall very much below that of other equipment which must be provided for in our tracks and the increase in use of safety cars adds more wheels which pass over the tracks through increased frequency of service. The number of lighter wheel loads, if increased over normal, may do as much total damage to rails and joints as the normal number of heavier loads.

It has also been commonly observed on all older properties which have long used a fairly heavy double-truck car that it is costing a great deal of money to make the "double-truck track" suitable for the single-truck car. A higher degree of maintenance is called for with single-truck cars and is being paid for right now. Until

we know just how much it is costing us to maintain a track almost as smooth as a billiard table, we shall be uncertain that the safety car is saving any money on track maintenance.

R. C. CRAM,
Engineer of Surface Roadway.

A Smile and Credit

THE CONNECTICUT COMPANY

NEW HAVEN, CONN., May 24, 1921.

To the Editors:

What a man wants from his grocer during this period of high cost of living is a smile and credit. Also that is exactly what the street railways want.

Hardly a man will deny that what he wants most nowadays anyway is "a smile." Applied to the street railway situation a smile means the good will of the public and no effort should be spared by officers or by employees in obtaining this good will. It is the most valuable asset a street railway can have and by a proper education of the conductors and motormen the good-will account can be increased to a large extent. One harsh word by a conductor may perhaps make an enemy of one of the road's best customers and booster. A good illustration is given in the following:

"A BANK TELLER'S UNRULY TONGUE"

An old and shabbily dressed man in the line at the receiving teller's window of a certain Chicago bank fumbled for some papers.

"For heaven's sake, hurry up!" snapped the teller.

The old man's eyes flared, he emitted a grunt of anger and left the line without making a deposit.

Twenty minutes later the teller was called into the cashier's office and told his services would be required no longer than the end of the week. He asked for an explanation and got it. The old fellow in the shabby clothes happened to be the head of one of the largest lumber companies in the Middle West—an organization that kept all of its checking accounts in that bank. He had dropped in to make a deposit and open a personal checking account. The amount he intended to deposit was large—the annual dividends from several of his organizations!

After his discourteous treatment by the teller, he had gone to the cashier, and not only refused to have his personal account in the bank, but he had hinted also that his lumber company might withdraw its balance from the bank. The cashier was forced to rid the bank of an undesirable employee who had let his frosty tongue spoil all of his other desirable qualities from the point of view of that banking establishment.

HARRY BOTSFORD, in *Leslie's*.

As for credit, the street railway officials have also forgotten what the word means, but the future is bright and I believe the public begins to realize that it cannot do without the street railways and that it will help to restore credit and thus give a new lease of life to the transportation systems of the country.

With the relief being granted by many legislatures from the unfair burdens of the past and with the riding public paying just fares, the street railways will be restored to a proper credit basis and will give the riding public the service it requires. Let's all vote for a Smile and Credit.

I. A. MAY, Comptrol'er.

Membership List of International Railway Association

THE International Railway Association, formerly the International Railway Congress, an international organization of steam railroads, has just issued a pamphlet giving a list of members, program for the Rome meeting to be held April 18 to May 1, 1922, index of topics discussed since the association was organized and a brief résumé of recent events.

Recent Happenings in Great Britain

All England Has Been Organized on War-Time Basis to Combat Domination by Coal Miners

(From Our Regular Correspondent)

Unfortunately for the industrial peace in this country, there is a body calling itself the triple alliance. It is a combine for common action of three national trade unions or federations of trade unions, namely, coal miners, railway men and transport workers (the latter including all sorts of transport employees except railway men). The transport workers thus embrace all tramway and omnibus employees, drivers of automobile and horse commercial vehicles, etc., but in this country the word railway does not include street tramway.

EARLY in the present year Parliament, at the instance of the Government, passed an act abolishing all state control of coal mining industry, which had been in operation since the beginning of the war and which otherwise would have continued until Aug. 31. The inflated wages of the miners under state control had to go, and when the mine owners issued new scales of wages, reduced to put the industry on an economic basis—the Government subsidiary being removed—the miners struck in the beginning of April and demanded a national wage board and a national pool of profits so that miners in all districts, rich and poor, would be paid at the same rate.

This action was resisted both by the owners and the Government, but the miners hoped to get the other two sections of the triple alliance to go on strike in sympathy. They announced that they would strike, but at the last minute, on April 15, the two affiliated bodies determined that their men should remain at work. The reasons advanced were that the miners had got a good offer for negotiation, and that the rank and file of railway men and transport workers would in a large proportion of cases refuse to go on strike.

NATIONAL STRIKE AVERTED

Something like a national strike was thus averted. The Government had all preparations made for carrying on transport by road, and the army reserves were called out and a defense force organized for maintaining order. Large bodies of tramway men in different parts of the country had resolved to join in the strike before the counter-order from the transport workers' executive was issued.

During April prolonged negotiations went on between the Government, mine owners, and the miners, and the Government offered a subsidiary of £10,000,000 to help to keep wages up during the ensuing four months of transition. The miners, however, refused all offers, and simply adhered to the demand for a national pool of profits, meaning nationalization. As Parliament had already decided against nationalization the Government persisted in refusing the miners' demand, which was now generally recognized as a political one and having nothing to do with wages.

At the end of April, accordingly, all negotiations were broken off, and the nation settled down to a struggle for

endurance. War conditions of economy were restored. Manufacturing industries were largely shut down for lack of coal, unemployment went up by leaps and bounds, and railway and tramway services underwent a series of successive curtailments. The Government, however, arranged that all public utility services should have a preference in the matter of coal supplies. For domestic purposes coal was rationed and supplies frequently cut off.

With the month of May the reductions in public services continued. Further trouble arose when the executives of transport workers and of the railway men issued orders that the members of these bodies were not to handle imported coal, which was now arriving in considerable quantities. Volunteers and non-union labor were engaged for the work. Meanwhile an important step was taken at several electric generating stations in the country; namely, the adopting of furnaces for oil burning. This was notably the case at Chelsea, the biggest traction power station in the country, which supplies power for the London underground railways. There twenty-four out of the sixty boilers were converted so as to begin operation with oil fuel in the middle of May. Fuel oil supplies are reported to be plentiful, and the change is likely to be permanent.

While town councils in Great Britain have for many years been authorized to own and work tramways and do so in all the large and in some of the smaller towns county councils have not been granted the same privilege. In only comparatively few cases, indeed, is there a field for county councils in this direction, owing to sparseness of population in rural areas and owing to town councils being empowered to operate beyond their boundaries where suburban or interurban population is very dense.

In this connection the London County Council, which works tramways, is a case by itself, for the county of London—all urban—is only a county for certain general administrative purposes. Some years ago the Middlesex and the Hertfordshire County Councils were authorized to construct tramways, but these were leased for operation to a private company. This spring a bold bid for a new departure was made by Durham County Council which applied to Parliament for power to build and work 27 miles of interurban tramways

in the county, to provide and work trackless trolley vehicles on 60 miles of route, and to run omnibuses on any road in the county. The cost of construction and equipment was to be about £1,700,000.

Objection was raised to the establishment of this precedent and to the heavy capital expenditure by a local authority at the present time. It was also maintained that financial loss would result which would have to be met by the ratepayers, and that the scheme was superfluous because private enterprise already provided omnibus services over all except 4 miles of the routes covered by the scheme. Competition with the North Eastern Railway, which pays 12½ per cent of the whole county rates, was also urged. When the bill came before the House of Commons on April 14 it was after discussion rejected by 112 votes against 46.

L. C. C. TRAMWAYS BEHIND

No more disastrous example of the result of high wages and high cost of materials in this country can be found than the case of the London County Council Tramways. The working of the undertaking, which carries more passengers than any other tramway system in this country, resulted in a loss for the financial year ended March 31 last of no less than £540,000. The expenditure debited includes some capital charges, but only half the cost of renewals. Even before the war the system was never a great financial success, largely because of the heavy capital charges for interest and sinking fund on the high cost of the conduit system which for the most part is used. The last increase of fares has greatly increased the receipts, but the higher revenue has proved quite inadequate to meet the growing expenses. The ratepayers are to be charged 1d. in £1 to help to meet the deficiency.

Arthur Watson, general manager of the London & North Western and the Lancashire & Yorkshire Railway Companies, lecturing to the Manchester Statistical Society in April, put forward the view of the most useful development in the methods of transportation would be the electrification of the railways. Restrictive legislation had, however, been passed to such an extent as to interfere with the fundamental principle on which the railway system had been organized; namely, that they were commercial undertakings. Unless reasonable dividends were realized railway enterprise must come to a standstill. Without such dividends it would be impossible to contemplate a large expenditure on the electrification of lines. The capacity of the railways would be enormously increased by the use of electric traction. The country was on the threshold of great electrical development, and the electrification of railways would give a great stimulus to a national system of electrical power production. These opinions of Mr. Watson are quoted as being of special importance, seeing that he is manager of a great railway undertaking.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION
PERSONAL MENTION

Publicity Effective

St. Louis Road Succeeds in Driving Home Need for More Liberal Treatment

Publicity relating to the financial problems of the United Railways, St. Louis, Mo., is bearing fruit. Civic organizations in five suburban subdivisions of the city will go before the Missouri Public Service Commission and request that the receiver be permitted to charge an 8-cent fare instead of a 7-cent fare, in order that credit shall be restored and funds obtained to extend several lines.

A recent statement of Receiver Wells made an impression. He said that the fare reduction last year from 8 cents cash, or two tokens on the cars for 15 cents, seven tokens for 50 cents or 50 for \$3.50 at drug stores to a flat 7-cent fare meant an actual reduction of only 37/100 of a cent in fare and yet caused a falling off of about \$3,000 a day in the receipts.

To various bodies of citizens clamoring for extensions of service the receiver has made it plain that the only way to get improvements is to increase the revenue and insure a surplus instead of a deficit. The first three months of this year showed earnings of about \$200,000 less than enough to pay interest charges and operating expenses. Travel has increased slightly the last two months, but the receiver says that if wages are not cut after June 1, when the present contract with the trainmen expires, an increased fare will be necessary.

Conferences are in progress between the men's union and the management over the proposed new wage contract. Motormen and conductors now are getting 55 cents an hour the first six months, 60 cents thereafter until the end of the second year, and 65 cents an hour after two years, with time and a half for overtime based on a nine-hour day. A special effort will be made to modify the working conditions which the management considers a hardship.

The Missouri Supreme Court recently denied the application of the receiver for a mandamus to compel the State Public Service Commission to arbitrate a wage dispute. This arose in the case of the shopmen, electricians, printers and others not belonging to the carmen's union. The court held it was optional with the commission as to whether they should serve as arbitrators. The commission had refused to act in the matter of the shopmen, and whether they will refuse again in case the carmen's claims go to arbitration is not yet known definitely.

In the meantime the receiver and the manager, Col. A. T. Perkins, have met

with various civic organizations to explain the situation, and one of the results is the decision by some of these bodies to support rather than oppose an expected application for increased fare. In one of his statements Receiver Wells brought out the new thought that under the changed condition of utility regulation the users of public utilities must be prepared to pay full value for service.

Threatened Strike Postponed

No agreement regarding wages had been reached on May 31 by trainmen and the Pennsylvania-Ohio Electric Company, Youngstown Municipal Railway and associated companies at Youngstown, Ohio. On that day at midnight the agreement expired, but operation of cars will continue and negotiations proceed at least for a day or two longer. The expiring scale is 60 cents for the first three months, 63 cents for the next nine months and 68 cents thereafter. The company originally offered 45, 48 and 50 cents, and the men after several weeks of negotiations offered to take 52, 55 and 60 cents. The company subsequently proposed a scale calling for 46, 50 and 53 cents. This was the status on May 31.

Utility Act May Strike Snag

The lower house of the Illinois State Legislature on May 25 approved the new public utilities act by a vote of 100 to 23. The bill struck a snag, however, when it was sent to the Senate and a warm fight is promised before its fate is determined.

The proposed law changes the name of the regulating body to "Illinois Commerce Commission." If it passes, the five commissioners on the present body will be succeeded by seven commissioners and eight assistant commissioners, to be appointed by the Governor for a term of four years.

It is said that the bill would remove all civil service safeguards. Communities would have the right to remove themselves from the jurisdiction of the commission and adopt home rule by public referendum. The proposed act has been denounced by various interests including the Western Society of Engineers.

A resolution has been introduced in the Legislature requesting the Governor to prevail on the commission to force a return of the 5-cent fare on the Chicago surface lines. It has been said that this is not favored by Mayor Thompson of Chicago who is looking for the approval of his plan for people's ownership of the traction lines and a 5-cent fare supported by tax provisions.

Des Moines Service Cut

Last Hour Struggle by Business Interests of the City to Preserve Railway to the Community

Following authority granted by Federal Judge Martin J. Wade the General Electric Company, which holds claims against the railway for material supplied, has started removing its equipment from the substations of the Des Moines City Railway with the result that on May 23 the railway officials were forced to cut service 62 per cent of what has been given during the last three months.

As a result the company operated only forty-nine cars from Monday night until Saturday morning when seventeen more cars were placed in service bringing the service up to what was approximately 50 per cent of normal.

Business interests of the city held meetings during the week to discuss ways and means of bringing about a settlement of the railway difficulties. The Greater Des Moines Committee and the Chamber of Commerce appointed a committee to draw a service-at-cost franchise which it is hoped will serve as a basis of bringing about a settlement of the trouble. This committee has since called into conference Judge W. E. Miller, the newly appointed Corporation Counsel to assist it.

Hope is entertained by members of the two organizations fostering the new franchise proposal that if a favorable franchise can be secured arrangements may be made between the Des Moines City Railway and the General Electric Company which will permit the substation to be restored.

F. C. Chambers, operating receiver, and J. G. Gamble, attorney for the railway, have been in Chicago conferring with the Harris interests relative to foreclosure of the mortgage.

According to a Des Moines newspaper the McKinley interests of Illinois, operating the Des Moines Electric Company, have made a proposition for the purchase of the Des Moines plant.

The statement for April filed with the City Council by the railway shows that the company lost \$35,000, a considerable increase over March.

Pending the settlement of the curtailment in the service, negotiations between the company and its union employees over the wage question are at a standstill. As yet the two arbiters chosen by the company and the men have been unable to agree upon a third man. A week ago they settled upon Judge F. F. Faville, of the Iowa Supreme Court, but he was forced to decline. Sidney Mandelbaum was later agreed upon for the third man, but he, too, refused to serve.

Four Months' Labor Battle

Railway at Albany Refuses to Compromise a Strike Issue that It Considers Clear Cut

Renewed attention has been directed to the strike of the employees of the United Traction Company, Albany, N. Y., by the recent disorder there, after a period of comparative quiet. The strike was declared on Jan. 28. The economic readjustment had not yet fully set in at the time, and the men, loath to accept a wage cut, decided to go out in a test of strength in contravention of their contract. In consequence Albany and the entire surrounding communities were thrown into turmoil.

THE pay of the men was increased last July from 45 cents to 60 cents an hour to continue to June 30, 1921, provided the company was allowed the right by the Public Service Commission to increase its rate of fare before Nov. 1, 1920, from 7 cents to 10 cents. The commission did not act upon the application until January, when it granted an increase of fare in Albany from 7 to 8 cents and ordered a decrease in fare in accordance with city franchises in Troy and Rensselaer. The company claims that the net result of the order was an actual reduction in revenue and that it was forced to put the men back on the 45 cents an hour pay to prevent bankruptcy. The company officials insist that the men understood that would be done under the provision in the contract that a general increase in fare be granted before Nov. 1 as a condition for a continuance of the 60 cents an hour pay.

Shortly after the declaration of the strike the company claimed:

1. That under the conditions of operation, wages, prices of material, and rates of fare, it had in six years sustained a loss of \$923,522.

2. That under the decision of the Public Service Commission, effective on Jan. 29, 1921, it estimated its loss for one year, if the rates of pay for motormen were continued at 60 cents an hour (others in proportion), would be \$743,974, and that at the rate of pay of 45 cents an hour, the proposed new rate, its loss for one year would be \$229,096.

3. That the contract between the company and the Amalgamated Association, so far as it covered wages, was ended as of Nov. 1, by the findings in the decision of the Public Service Commission.

Neither the first nor the second of these statements was ever challenged. With respect to the third statement, the Public Service Commission itself said:

That contract (of July 1, 1920,) fixed the wages until Nov. 1, 1920, "with the understanding that said rates of wages are to continue until June 30, 1921, provided the company is granted permission to charge increased rates on or before Nov. 1, 1920." No such permission has been granted, so that there is now no contract covering wages.

The men stuck to their guns, so to speak. Through Supreme Court Justice Howard an order was secured directing that the issues, raised in the application of the union for an order directing the company to proceed to arbitrate the differences, be submitted to a jury. This order was reversed by the Appellate Division, Third Department, on May 17. The decision dismissed the entire proceedings and held that the striking carmen had no claim to arbitration under the contract involved except as to wages for the year

beginning June 30 next. The court also held that the members of the unions "abandoned the contract and committed an anticipatory break of the provision for arbitration by destroying its consideration before it had an opportunity to come into operation." Said the court:

When, on Jan. 28, 1921, the employees of the Traction Company, members of the petitioners' unincorporated association, left their employment, leaving the traction company incapable of immediate performance of its obligations to the public, they committed a breach of the contract, and if there had been a valid agreement for an arbitration of all controversies, they would have relieved the traction company of the obligation to perform. . . . The provision for arbitration is limited. . . . This agreement relates wholly to an adjustment of wages for a period succeeding the term of the contract (June 30, 1921). . . . There was no provision in the contract that the traction company would arbitrate any dispute over wages arising in January, 1921. . . . The election on the part of the employees to abandon their employment in disregard of the contract made in their behalf by the petitioners could not impose an obligation which was not provided in the contract.

Meanwhile the struggle settled down to a real test of strength between the company and its former employees. All the various angles of the ordinary strike entered the controversy, only they became more pronounced as time went on. Even political factions split over the labor issue. Jitneys and omnibuses then poured into Albany, Rensselaer, Troy Cohoes and Watervliet, the five principal cities in which the company operates, and did a rushing business.

For a long time they provided nearly all of the transportation facilities of the entire section and were the cause not only of a long legal fight but of the break in the Republican organization. William Barnes, the Albany County Republican leader, at a Republican dinner in February, urged the public to support the company. He said that it could not continue to pay the increased wages of the men because of its financial condition and that it was to the best interest of the employees to accept the reduction and the public to prevent the company from going into bankruptcy.

Pressure was brought to bear on Mayor James R. Watt to get him to order the jitneys out of business. He refused. The company then secured a mandamus order from Supreme Court Justice Harold J. Hinman directing him to stop the jitneys from running on the ground that they violated the law prohibiting buses from operating on the same streets with trolley lines. That order was upheld by the Appellate Division, and the police began arresting all jitney drivers and bus owners who were

not licensed to run. Out of these arrests grew the recent disorders that at one time apparently threatened to get beyond the bounds of the local police and the State Constabulary to deal with them. Until the issuance of the order forbidding jitneys to carry the people who did not want to ride on the trolleys the strikers and their sympathizers seemingly were content to allow the contest to drag along in the hope that the company might submit or compromise.

The position of the company is that had the questions at issue been dispassionately stated by such a tribunal as the Industrial Commission, had there been a vote thereon with the security and secrecy of the Australian ballot, with an honest count under disinterested authorities, three-quarters, or even one-half, of its former employees would have been found willing to "perform their labor" until the end of June, 1921.

In order that the attitude of the company on the matter might be definitely known, a letter was mailed to each former employee on March 24, last, advising that the company would receive individual applications and that such men as were considered competent and desirable would be employed, with the understanding that the seniority-rights of such employees would begin on the day their applications were accepted; that applications from former employees for their old jobs would be received on and after that date until further notice.

This offer has never been rescinded and is still open to former employees to the extent only however as to such positions as are now vacant as in no event will the men now permanently employed be removed without just cause.

Florida Road Praised

"A Country Banker," writing in the *Saturday Evening Post* for May 21 about his experiences in Florida and elsewhere, said:

The first time I came here, four years ago, the street-car service was in a poor way—cars old and dirty and with a general air of dilapidation. It was owned by a corporation, and that corporation was owned by another corporation. The car line went into bankruptcy and things got worse instead of better, until finally the city took over the plant. It evidently picked out a capable man for manager, and bought new cars throughout, clean and smart-looking and of a type better adapted to traffic conditions here than the old cars had ever been. It rearranged schedules and put the plant in good shape. And now, although it charges only a 5-cent fare, it is making a quite satisfactory showing, and they are laying out some extensions.

Of course I don't know how much of a return on the capital investment a rigid system of bookkeeping would show. But as the city has to provide transportation for a population of 60,000 in winter and only 20,000 in summer the public officials probably figure that a good street-car service which will pay its way is a good investment for the town. The city also operates a gas plant to the general satisfaction of everybody concerned.

The point is that here is an example of successful politics. The city not only performs the usual functions of a city satisfactorily, but also runs a gas plant and a street-car system very satisfactorily.

The city to which he refers is presumably St. Petersburg.

Basis Found for New Orleans Negotiations

C. C. Chappelle, representing the Eastern security holders of the New Orleans Railway & Light Company, New Orleans, La., attended the meeting of the Commission Council on May 25 and submitted his promised scheme of reorganization. Several features of the plan won commendation. It is too much of course to expect that any plan would be acceptable in toto on presentation.

The plan advanced by Mr. Chappelle accepts the rate base valuation of the citizens' advisory committee and assumes \$44,700,000 as a fair valuation of the property for rate-making purposes. As opposed to this there are outstanding capital liabilities of \$71,000,000. The plan provides for an 8 per cent return. Mr. Chappelle argued that this rate of return was essential to secure new capital. Moreover the holders of the senior securities would have to be compensated to relinquish their position of priority. All of the common stock and virtually all of the preferred stock would be wiped out if

an agreement which could be ended by either party on thirty days' notice. The employees finally agreed to remain at work for 48 cents an hour, the old scale, with a yearly agreement the wage clause of which can be terminated on sixty days' notice.

The Ontario Railway & Municipal Board operated the railway for a year, but gave up control on April 30 last, after proving that at the present rate of fares—nine limited and seven unlimited tickets for a quarter—the company cannot meet its obligations, one of which is to pave its share of streets traversed by its lines.

Excursionists Meet with Accidents

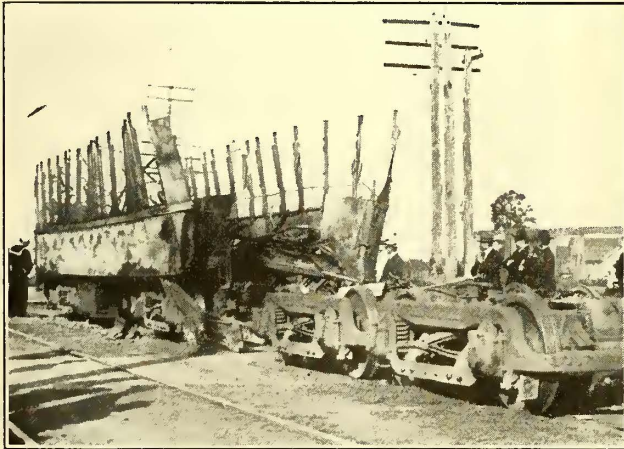
About fifty people were injured, a few fatally perhaps, on May 30 when a Pennsylvania freight train crashed into a fast car of the Indianapolis, Columbus & Southern Traction Company, known as the Dixie Flyer, at Edinburg, Ind., where the tracks intersect.

Two Public Service Railway cars collided near Roebing, N. J., on May 30,

Service-at-Cost Agitation Renewed

Operation at service-at-cost for the Dallas (Tex.) Railway has again come to the fore as the new administration of Dallas, which took office on May 2, is considering reopening the question. This issue was one of the chief points on which the recent city campaign was waged.

M. N. Baker, the first supervisor of public utilities under the traction franchise granted to the Strickland-Hobson interests in 1917, has contributed an important chapter in this discussion in a letter written to Lynn B. Milam, who served as supervisor of public utilities under the administration of Mayor Frank Wozencraft. Mr. Baker strongly commends the stand taken by Mr. Milam in favor of the service-at-cost plan, and declares that in such a franchise alone can the city of Dallas expect to find solution for the many problems confronted in the management and supervision of the city's utilities. Mr. Baker also makes reply to the objections to the service-at-cost plan voiced by Mayor Sawmie Aldredge.



LEFT—REMAINS OF CAR IN NEW JERSEY WRECK. RIGHT—DEBRIS SHOWING NEW YORK MISHAP

the plan submitted were followed. It would probably take \$11,500,000 new money to put the company in shape including the sum needed immediately for rehabilitation.

There would be a new company, under a new name, financed largely in New Orleans with a New Orleans man as executive head, and operations to be regulated by the city, with possible representation of the city upon the board of directors.

A scale of rates, to be reduced as the cost of labor, fuel and materials comes down, was promised by Mr. Chappelle.

Wage Contract at London Readjusted

The difficulties between the London (Ont.) Street Railway and its employees have been settled by compromise, and a new agreement has been signed. The men asked for an increase in wages from 48 to 52 cents an hour and a yearly agreement. The company refused the wage increase and proposed

killing one man and injuring about 100 persons. The wreckage took fire. Misunderstanding of orders is believed to have been the cause.

Between fifteen and twenty persons were injured on May 30 in New York City when a Third Avenue Elevated Railroad train bound north with passengers from Staten Island and Brooklyn jumped the track at Westchester and Third Avenues near 149th Street. The first car became uncoupled from the second and went up Westchester Avenue, turning half-way around at Bergen Avenue and blocking north and south-bound tracks. The other cars of the train continued up Third Avenue and smashed a signal tower. When these cars finally came to a stop the second car was left overhanging the elevated structure.

A representative of the Interborough Rapid Transit Company said that the derailling was due to man failure on the part of the motorman. At the point where the wreck occurred there is a spur which connects the elevated road with the subway.

Mr. Baker's letter to Mr. Milam follows in part:

Mr. Aldredge's fears that the supervisory forces of the city will not be able to determine the proper costs are entirely without foundation, as I know, from experience, that the determination of all facts controlling the operation of the railway is a matter which any business man with proper accounting and engineering advice can easily ascertain. There is nothing illusory about the accounting methods of utilities, and with the supervisory powers of the city properly administered the exact status of all revenues and expenses can easily be arrived at.

But, aside from all this, the immediate necessities of the city with reference to improved facilities and extensions of service require that a definite program be developed by any set of city officials who may hold office. It is evident at the present time that transportation development is at a standstill in our city, and that the present franchise, with its limitation of a 5-cent fare, regardless of the cost of operation, has utterly failed and gives no promise for the future.

Of particular interest in this connection are the plans which have been submitted to the city officials by Dallas by the Dallas Railway for the ultimate development of a system of lines touching every part of the city and affording transportation to the maximum number of citizens. These plans were submitted in connection with the com-

pany's application for charter changes, which include the service-at-cost plan of operation with a guaranteed return of 7 per cent on the agreed valuation of property involved in the operation of cars.

In the ultimate development plan numerous changes are contemplated in the existing lines by taking up portions of certain lines and the laying of new lines on other streets. It is proposed to spend \$2,000,000 for improvements within the next five years. A complete map of the city showing all changes proposed has been prepared under Mr. Meriwether's direction and has been presented to Mr. Everman for use of the city in studying the proposed changes.

Power Plant Men Strike in Cincinnati

Plants furnishing power for the Cincinnati (Ohio) Street Railway inclines shut down at 11 p.m. on May 31 when twenty-nine stationary engineers employed by the Ohio Traction Company quit their jobs and walked out. Other power plants supplying current for street railway operation were kept going by men who took the strikers' places. Service will probably be curtailed until the strike is settled, but the public may be sure of day transportation at least.

As for owl service, officials of the company would make no definite promises, saying merely that they "expected to keep the cars going and would do the best we can."

The walk-out followed notice served on officials of the traction company at 10:30 a.m. on Tuesday by Charles B. Manwood, business manager of Stationary Engineers Union, Local No. 18, that all engineers employed by the traction company would go on strike at 11 p.m. Tuesday night unless their wage demands for the coming year were met before that time.

A verbal agreement has existed between the company and the union whereby the men have been receiving 90 cents an hour for the last year. The walkout followed refusal of the traction company to renew the agreement and a suggestion on the part of the company of a cut in wages for the engineers.

W. Kesley Schoepf, president of the railway, and Walter Draper, first vice-president, said that officials of the company met with union representatives on Monday morning in an effort to reach some agreement. They said that the engineers refused to accept the offered wages of 65 and 70 cents an hour, declined an invitation to make a counter proposal entailing any reduction in the wage now paid and turned down all offers on the part of the railway to submit the dispute to arbitration.

Mr. Draper said that the main power houses of the company would be operated regularly and that operation of the inclines would be resumed as soon as the company is sure that it has enough men for the purpose.

Strike Averted in Michigan

Throughout the final days of May continuous efforts were made to reach an adjustment of the wage differences between the employees of the Michigan United Railway and the company, and half an hour before the time set for a strike the controversy was amicably settled with the wage cut as the only new feature of the agreement. During the negotiations it was stated that the wage reduction was to come at the conclusion of the wage agreement which guaranteed a wage scale to last until June 1.

Mayor Frank T. Bennett of Jackson led in the attempts which were made to settle the differences amicably. He at one time obtained a promise from the employees to delay action until members of the Chamber of Commerce had had an opportunity to discuss the question with them.

Wages Reduced in Johnstown.—General Manager Shannon of the Johnstown (Pa.) Traction Company has announced a reduction of 5 cents an hour in the wages of the employees. The reduction, effective May 22, affects 450 men.

Buffalo May Have Buses.—The International Railway, Buffalo, N. Y., is considering the advisability of running a bus line in Bailey Avenue until such time as it would be justified financially in laying tracks. The company was granted a franchise to lay tracks and operate cars through the street some years ago, but the time limit has expired.

Wage Reduction Suggested.—Trainmen of the Connecticut Company, New Haven, Conn., all over the State held special meetings during the week ended June 4 for the purpose of hearing the report of their wage committee, which has recently been in conference with officers of the railway. While no official statement is forthcoming, it is understood that the committee will report to its constituents that the company refuses to entertain the proposal to increase wages 25 per cent and in reply counters with a proposal to cut wages 15 per cent. The members of the union will be asked to express their views and issue instructions to the committee with respect to the policy to pursue in the future.

Programs of Meetings

American Railway Association

A business session on June 15 and 16, at the Hotel Drake, Chicago, has been proposed by the general committee of the mechanical division of the American Railway Association instead of the convention that has usually been held at Atlantic City, N. J. The reports of standing and special committees have been considerably modified on account of the limited time allowed for the proposed June session. Reports will be received on the following subjects: "Prices for Labor and Materials," "Car Construction," "Loading Rules," "Brake Shoe and Brake Beam Equipment," "Train Brake and Signal Equipment," "Specifications and Tests for Materials," "Tank Cars," and "Standard Methods of Packing Journal Boxes."

Signal Section.—A. R. A.

The annual meeting of the Signal Section, American Railway Association, is to be held at Chicago on June 6, 7 and 8. Committee X presents a report on the requisites of signal locations for automatic block signals. This committee, among other things, will report on automatic train control, and on a proposed short code of requisites for light signals. Committee IV will present a code of instructions for making torque tests of power-operated signals, and a drawing of torque testing apparatus. Committee XV on valuation, J. M. Carley, chairman, will present a report of a dozen pages giving the result of studies in valuation details made by several sub-committees.

News Notes

Minnesota Roads All Under State.

All electric railways in Minnesota are now under state control as to rates. Franchises have been surrendered by the Minneapolis & St. Paul Suburban Railway granted by the cities and villages it serves. This is the last company to take advantage of the new law passed by the recent Legislature.

Wage Cut Rejected.—Conductors and motormen at Evansville, Ind., have voted to reject the orders of the company for a wage reduction of 9 cents an hour proposed a few days ago by the head of the Southern Indiana Gas & Electric Light Company. The men are still at work. The scale paid to the men is from 45 to 50 cents an hour on the city lines, and 52 cents an hour for men on the interurban cars, and 54 cents an hour for men working the one-man cars.

Service-at-Cost Suggested at Vancouver.—An agreement is now under consideration by the City Council of Vancouver, B. C., by which the British Columbia Electric Railway would give service at cost, selling four tickets for 25 cents, charges for electric light and gas to remain as at present, and be allowed 6 per cent interest on investments made in the past, and 8 per cent on future investments. At present tickets sell for six for 35 cents; the change would mean an increase of 5 cents for every twelve tickets. Blundell Brown, one of the directors of the company, is at Vancouver from London, England, and is understood to be bending his efforts to inducing the city of Vancouver to take over the system when the franchise expires.

Financial and Corporate

Twelve Large Companies Compared

Gross Earnings Increase 17 per Cent, but Expenses 22 per Cent and Operating Ratio 4 per Cent

In the April 16 issue of ELECTRIC RAILWAY JOURNAL, figures from the bureau of information of the American Electric Railway Association were given to show comparative results in 1920 and 1919 from a total of 127 electric railways. Of this total seventy-two were city companies and their gross income exceeded \$233,000,000 in the past calendar year.

An additional interesting comparison may be made with the data from twelve of the largest city properties, the identity of which cannot be made known. These same properties were considered in a review published on page 38 of the issue of July 3, 1920. Their size may be judged from the fact that their gross earnings in the last fiscal year exceeded \$300,000,000 and that they operated one-seventh of the track mileage of the United States. Six of the companies under consideration operate urban surface lines, and the others are rapid transit lines in whole or in part.

The smallest of these properties did an annual business exceeding \$8,000,000 and the average receipts of the twelve were more than \$25,000,000. The pre-

operating ratio averaged 73.8. In 1918 their combined ratio was 60.74.

More service was rendered by each car in the past year on surface lines, the annual miles operated per car averaging 36,565 as against 35,703. The contrary was the case for the rapid transit lines, these figures being 38,440 and 39,200, respectively. The showing as to revenue passengers hauled and revenue car miles operated is not given on a fair basis for the past twelve months because one of the larger properties was split up into several parts which decreased the total for the group of surface lines. As a result the totals for both these items was practically the same as in the preceding year. On the rapid transit lines, however, there was a gain of 11 per cent in number of revenue passengers, while the total of car miles was practically at a standstill. The number of car miles per car hour showed a decrease, evidently due to the fact that the car hours were augmented by contract requirements calling for payment of many "bonus" hours. This item, therefore, is not a true indication of speed performance.

It is impossible to secure a true statements of the total passengers per mile of single track operated because some of the companies, particularly in the rapid transit group, keep no account of transfer or free passengers. However, using the figures as they are pre-

STATISTICS PER CAR-MILE AND PER CAR-HOUR ON TWELVE LARGE ROADS

	Six Surface Lines	Six Rapid Transit
Transportation revenue per car-mile (average)	44.7c.	38.0c.
Expenses and taxes per car-mile (average)	37.6c.	30.6c.
Transportation revenue per car-hour (average)	\$4.00	\$4.63
Expenses and taxes per car-hour (average)	\$3.37	3.70

vailing rates of fare varied, three charging 5 cents; two, 5 cents with a 2 cent transfer charge; one, 6 cents with a 1 cent transfer charge; three, 7 cents; one, 8 cents and two, 10 cents.

Gross earnings of the six large surface companies showed an increase of 17.4 per cent over the previous year, while there was a gain of 21.8 per cent in operating expenses including taxes. For the six rapid transit companies these increases were 17.2 and 22.3 per cent, respectively. The operating ratio for the surface group averaged 87.45 per cent and ranged from 78.26 to 103.38 per cent, whereas the average in the preceding year was 83.06. For the rapid transit group the average was 77.26 against 74 per cent in the previous twelve months, the percentages for the past year ranging from 57.83 to 89.02. The six companies in the latter group would have made a better showing except for the fact that half of them include a large percentage of surface mileage. Taking those which operate subways or elevated lines only, the

presented, there was an increase of 9.4 per cent for surface companies and 4 per cent for rapid transit lines. The number in the former group ranged from 869,223 to 2,381,909, and in the latter from 1,198,190 to 1,603,281, showing plainly the absence of transfer and free passengers from the total.

In these figures, as in the ones given below, the comparison is not entirely fair because five of the companies have a fiscal year ending on June 30, while the others more nearly correspond to the calendar year. The latter class have the advantage of larger earnings from recent increases in rate of fare but on the other hand they were burdened with higher costs due to higher wages starting about the middle of the year.

Puget Sound International Railway & Power Company, Everett Wash.—The Puget Sound International Railway & Power Company will shortly put in operation its Marthas Lake substation.

Baltimore Triples Net

No Dividends Paid on Common Stock—Surplus Being Put Into the Property

The report of the United Railways & Electric Company, Baltimore, for the year ended Dec. 31, 1920, showed net earnings for the year amounting to \$2.55 per share as compared with 60 cents the previous year. The par value of the stock is \$50. The surplus at the end of the year after making reserve for injuries and damages as well as provision for Federal taxes for the year 1920 amounted to \$1,165,027, or 238 per cent more than the previous year. The accompanying tables give in detail the income and expenses as well as miscellaneous statistical information concerning the year's operation in comparison with the previous year.

SURPLUS GOING INTO PROPERTY

The report calls attention to certain matters as the result of the year's operation.

(1) The company had net earnings during the year of \$1,043,599 after the payment of all operating expenses, taxes, fixed charges and interest including interest on income bonds. The Public Service Commission of Maryland has ruled that it is to the best interest of the public, under existing conditions, that the company should earn a surplus of not less than \$1,000,000 nor more than \$1,500,000 for a year.

(2) The company paid no dividends on its common stock, but put the entire surplus, and in fact the entire amount of the year's depreciation reserve, back into the property. These sums, together with the ordinary maintenance account, aggregated a total sum of approximately \$4,000,000. These expenditures, together with the acquisition of new cars, have created a marked improvement in the physical condition of the property. During the year a new contract was made with the Pennsylvania Water & Power Company for a full supply of power at a cost less than the company could produce power for itself. This enabled the Pratt Street power station to be sold for \$4,000,000, which sum can be used for other capital purposes.

Another interesting item is that the ratio of fixed charges to gross receipts is now 18 per cent as compared with 46 per cent in 1900, which showed that owing to increased receipts the interest charges in 1920 were approximately 18 per cent of gross revenue, as compared with 34 per cent in 1911, and 46 per cent in 1900. During the past two years 41 miles of track have been reconstructed, which is nearly one-sixth of the total amount of trackage within the old city limits. During 1920 there were either built or rebuilt 19 miles of track, of which more than 3 miles represented extensions. During the year the company also abandoned 8.6 miles of old track, which it inherited from the days of duplicated street car service.

There have been added during the year thirty-three one-man front-entrance cars, which have been assigned to the Fremont Avenue line. One hundred double-truck center-entrance trailer cars were also purchased. Car trust certificates as of July 1, 1920 on an 8 per cent basis have been issued for payment of these cars.

All of the one-man front-entrance cars have been in service since July 1 and have demonstrated satisfactory and economical operation, as

INCOME STATEMENT—UNITED RAILWAYS & ELECTRIC COMPANY OF BALTIMORE

Year Ended Dec. 31:	1920	1919	Per Cent Change
Revenue from transportation	\$17,196,471	\$14,711,455	16.89
Revenue from other railway operations	117,128	82,729	41.49
Total railway operating revenue	\$17,313,599	\$14,794,234	17.03
Railway operating expenses:			
Way and structures	\$1,004,747	\$915,289	9.77
Equipment	1,087,002	919,863	18.17
Power	75,738	64,080	18.19
Total maintenance	\$2,167,487	\$1,899,232	14.12
Depreciation	865,680	739,712	17.03
Power service	1,170,404	1,027,846	13.87
Conducting transportation	5,465,492	4,898,515	11.57
Traffic	12,066	5,262	129.32
General and miscellaneous	1,649,712	1,361,383	21.18
Total operating expenses	\$11,330,841	\$9,931,950	14.08
Net operating revenue	5,982,758	4,862,284	23.20
Taxes, licenses, etc., assignable to railway operation	1,839,421	1,409,262	30.52
Operating income	\$4,143,337	\$3,453,022	19.99
Non-operating income	120,740	40,017	200.97
Gross income	\$4,264,077	\$3,493,139	22.07
Deductions:			
Interest on funded debt	\$2,030,264	\$1,998,600	1.58
Rents	421,384	477,793	11.81
Interest on unfunded debt	117,490	93,200	26.06
Interest on income bonds (4%)	559,157	559,080	0.01
Amortization of discount on funded debt	53,068	48,785	8.78
Other amortization items		30,000	
Miscellaneous	39,115	39,257	0.36
Total deductions from gross income	\$3,220,479	\$3,246,715	4.64
Net income transferred to profit and loss	1,043,599	246,424	324.00
Profit and loss surplus at beginning of year	345,057	362,370	4.67
Profit and loss credits	462,962	342,527	35.20
Gross profit and loss surplus	1,851,619	951,322	94.90
Dividends and common stock		204,612	
Dividends on preferred stock	383	920	58.40
Contributions incident to the war		23,176	
Adjustment of reserve for injuries and damages	170,888	225,000	24.00
Provision for uncollectable accounts receivable		30,586	
Income and excess profits taxes	48,008	86,221	43.40
Welfare department deficits		31,004	
Adjustment items in cancellation of preferred stock	6,870		
Loss on abandoned equipment of leased road	158,327		
Engineering and other deferred expenses	183,230		
Metal tickets and fare boxes	45,959		
Adjustment account of power contract	56,573		
Miscellaneous	16,354	4,746	244.50
Total profit and loss debits	\$686,592	\$606,265	13.25
Profit and loss surplus at end of year	\$1,165,027	\$345,057	238.00

Figures in italics show decrease.

well as ability to furnish a much more frequent headway. The results show a net saving through increased receipts due to increased mileage and decreased cost of approximately 30 per cent per year on the investment. The trailer cars are gradually being introduced and are producing economies both in platform labor and power consumption, at the same time reducing the congestion in the business section of the city, as it is obvious that two cars, operated as a unit, are able to pass through the traffic with greater expedition than two cars operated singly. For the purpose of hauling the trailer cars, alterations are being made to 150 double truck-motor cars. These alterations consist of adding vestibules, folding doors and steps, changing platform control, installing

door contacts, lights and signals, as well as a new type of coupling device. The work of vestibuling the double-truck semi-convertible cars is proceeding in accordance with the orders of the Public Service Commission at the rate of six cars per month.

Systematic efforts to reduce accidents showed that notwithstanding the increased car mileage there were 12 per cent fewer accidents than in 1919.

The company has made quite a number of experiments in re-routing of cars and with a service of limiting stops. These experiments have been tried only after an exhaustive study of the situation, which indicated possible favorable results. The public has been most patient with these experiments and should greatly benefit by increased car-

rying facilities and shortening of time spent upon the cars. This, with the cooperation of the Police Department of the City of Baltimore in helping the traffic conditions, has enabled the company to show approximately 11 per cent improvement in the speed of cars.

Appended to the report are graphic charts showing in detail the various operating costs, the receipts and expenditures per car mile and the distribution of gross revenue in fixed charges and various operating expenses on a percentage basis. An organization chart of the various departments is also attached.

Earnings of Ohio Electric Railway Improve

The report of B. H. Jones, receiver for the Ohio Electric Railway system, made to the federal court at Toledo, Ohio, during the week ended April 30, for operations from Jan. 26 to Feb. 28, indicates that under the receivership the group of properties in the system made a substantial gain in earnings over the same period a year ago. The receipts from all sources totalled \$1,130,351. After disbursements a cash balance of \$102,015 was left.

The Indiana, Columbus & Eastern Traction Company, a subsidiary, had a surplus from operations of \$1,346 for the month, compared with a deficit of \$11,344 for the same period in 1920.

The Columbus, Newark & Zanesville Electric Railway had a surplus from operations of \$9,697 for the month compared with a deficit of \$6,895 for the same month a year ago.

The Fort Wayne, Van Wert & Lima Traction Company had an operating surplus of \$588.

The Ohio Electric Railroad, which owns and operates the lines from Toledo to Lima, had an operating deficit for the month amounting to \$9,496 as compared with a deficit of \$18,258 for the same period in 1920.

Refinancing Plans Approved

Stockholders of the Northern Ohio Traction & Light Company, Akron, Ohio, have approved the refinancing plans involving the sale of \$4,548,000 of preferred stock, bringing the capitalization to \$20,000,000 of equal portions common and preferred.

The new stock will be offered to stockholders on either of the following plans: An exchange of two shares of the old 6 per cent preferred for two of the new 7 per cent by buying one share of the new at \$95 and accrued interest, or an exchange of the old for the new by payment of \$10 for each share so exchanged. In either case stockholders must agree not to sell their stock for less than \$95 prior to Jan. 1, 1923. Stock not taken by stockholders will be offered to customers.

The plan for this rearrangement of the capitalization of the company was reviewed at length in the ELECTRIC RAILWAY JOURNAL for April 30, page 829.

STATISTICAL INFORMATION—UNITED RAILWAYS & ELECTRIC COMPANY OF BALTIMORE

	1920	1919	Per Cent Change
Car-miles operated	37,162,202	35,522,354	4.62
Revenue passengers	253,934,179	243,890,966	4.12
Transfer passengers	93,883,660	86,756,575	8.22
Total	347,817,839	\$30,647,541	5.20
Operating ratio	65.44	67.20	(a) 1.76
Car-mile statistics:			
Operating revenue (cents)	46.70	41.70	12.00
Operating expenses (cents)	30.55	28.00	9.10
Net income (cents)	2.81	0.69	3.07
Total revenue and transfer passengers	9.37	9.32	0.54
Car-miles per revenue passenger	0.1069	0.1458	(a) 0.0389
Taxes—Per cent of gross revenue	10.55	9.50	(a) 1.05
Per cent of net operating revenue	30.75	29.00	(a) 1.75
Return earned and common stock (\$50 par)	\$2.55	\$0.60	324.00
Depreciation reserve:			
Per cent of road and equipment value	1.055	0.972	(a) 0.083
Per cent of operating revenue	5.00	5.00	

(a) Difference.

Answers to Accounting Questions

Another Series of Questions and Tentative Answers Under the Uniform System of Accounts for Electric Railways

Another series of tentative answers to questions raised in connection with the uniform system of accounts, prescribed by the Interstate Commerce Commission, has just been issued. As these answers have not received the formal approval of the commission, however, it should be understood that the decisions do not represent its final conclusions and that they are subject to such revision as may be thought proper before final promulgation in the accounting bulletins of the commission.

THE case numbers covered below are from A-548 to A-563, with certain omissions. Other installations will follow. The omitted numbers represent cases which either are not of sufficient importance to justify publication or involve questions upon which a definite conclusion has not been reached.

Q. (A-548). In track renewal work where the old rail is replaced with heavier rail and untreated ties are replaced with creosoted ties, what accounting should be followed?

A. The excess cost of the improved rails, rail fastenings and ties over the original cost (estimated if not known) of the rails, rail fastenings and ties removed shall be charged to the appropriate road and equipment accounts. The remainder of the expenditures less the value of salvage recovered shall be charged to the appropriate accounts in operating expenses.

Q. (A-550). To what account should be charged the cost of labor cutting grass and weeds on the right-of-way and about trestles and bridges for protection against fire?

A. To account 8, "Track and roadway labor." (See Cases 61 and 319, Accounting Bulletin 14.)

Q. (A-551). To what account should be charged the cost of X-ray apparatus and the expenses of a representative sent to inspect the same before purchase?

A. The cost of the X-ray apparatus, including the cost of inspection, is chargeable to account 538, "Miscellaneous equipment."

Q. (A-552). To what account should be charged rent paid for foreign equipment used for maintenance of way and structures?

A. To account 98, "Rent of equipment." (See Case 274, Accounting Bulletin 14.)

Q. (A-554). To what account should be charged the cost of a waste paper baling machine?

A. To account 538, "Miscellaneous equipment."

Q. (A-555). A carrier issues one-year notes to refund an issue of two-year notes carried in the funded debt account. Should the refunding issue be accounted for as funded debt and the discount treated correspondingly?

A. The face value of the one-year notes shall be credited to account 430, "Loans and notes payable." The discount shall be included in account 420, "Other unadjusted debits," and amortized by monthly charges to account 221, "Interest on unfunded debt."

Q. (A-556). A carrier constructs a track to an industry under agreement that the industry shall advance part of the construction cost and be reimbursed therefor on the basis of cars switched for the industry. What is the correct accounting?

A. The entire construction cost shall be charged to the investment accounts. The amount advanced by the industry shall be credited to account 438, "Other deferred liabilities," and refunds shall be debited thereto as made.

Q. (A-557). When a lessee carrier bears the sinking fund charges of a lessor carrier and meets these charges from proceeds of a bond issue, in whose books should the sinking fund accounts be set up and what accounting should be observed with respect to: (a) Payments as made? (b) Accretions to the fund for interest thereon, etc.? (c) The acquirement of bonds for cancellation and retirement? (d) Discount or premium at which the bonds are purchased? (e) Expenses of the trustee incident to the reacquirement of the bonds? (f) Amounts paid for interest, accrued prior to date of purchase?

A. The lessee shall treat the payments as advances or rent according to the terms of the lease, sinking fund accounts being set up in the books of the lessor with accounting as follows:

(a) As payments are made by the lessee to the sinking fund trustee, the lessor shall debit account 402, "Sinking funds," and credit the lessee or the rent account, as appropriate. If treated as rent, a concurrent entry shall be made debiting account 309, "Appropriations of surplus to sinking fund and other reserves," and crediting account 449, "Sinking fund reserves."

(b) Accretions to the fund for interest, etc., shall be debited to account 402 and credited to account 209, "Income from sinking fund and other reserves," and concurrently account 309 shall be debited, and account 449 credited if the amount thereof is to be held as a part of the reserve. If this, or any other item previously appropriated from surplus, is later used in the reacquirement of the carrier's own bonds for cancellation, account 449 shall be debited and account 448, "Funded debt retired through surplus," shall be credited with the amount expended in the discharge of the principal (less the discount, if any, suffered at time of sale).

(c) When bonds are reacquired for cancellation and retirement account 427, "Funded debt unmatured," shall be debited and account 402 credited with the par value of the bonds.

(d) Concurrent with the entry provided in paragraph (c), account 402 shall be debited and account 306, "Miscellaneous credits," credited with the amount of the discount at which the bonds were purchased, or if acquired at a premium, account 402 shall be credited and account 317, "Miscellaneous debits," debited with the amount of the premium paid.

(e) Expenses of the trustee incident to the reacquirement of bonds such as those for advertising, notary's fees, etc., shall be debited to account 317, "Miscellaneous debits," and credited to account 402.

(f) Amounts paid for interest which accrued prior to the date of purchase by the trustee shall be debited to the account originally credited and credited to account 402; and if accrued interest has been set up in the accounts for the period subsequent to the date of reacquirement an adjusting entry shall be made canceling the same. (See Case 312, Accounting Bulletin 14.)

Q. (A-560). A carrier wrote off to profit and loss in former years the cost of an investigation concerning the advisability of constructing an extension, the project having been abandoned before construction was begun. The same project is now revived and upon basis of the former investigation the extension is made. Is it permissible to restore the former preliminary costs and include them in the cost of the present work?

A. Expenditures for the preliminary investigation shall be included in the cost of the extension and profit and loss credited with the amount previously charged thereto.

Q. (A-561). To what accounts should be charged the cost of hand trucks, miscellaneous hand tools and warehouse scales purchased when an electric carrier begins the handling of freight traffic?

A. The cost of such property is chargeable to account 538, "Miscellaneous equipment," except built-in scales, the cost of which is chargeable to account 524, "Stations, miscellaneous buildings and structures."

Q. (A-562). A carrier sells power to an industry at cost, plus a fixed percentage for fixed charges and return on investment and desires to exclude from its power accounts the cost of the power thus sold. Is it permissible to credit the several power production accounts with the cost of production and revenue account 118, "Power," with the balance?

A. The power furnished the industry shall be accounted for as a sale and the entire proceeds therefrom credited to revenue account 118, "Power," unless the power business is accounted for as an auxiliary operation, in which case account 202, "Auxiliary operations—Revenues," shall be credited.

Q. (A-563). To what account should be charged the cost of dredging to restore depth of water at a dock used for ferry service incident to railway operations?

A. To account 24, "Buildings, fixtures and grounds."

Boston Deficit Being Reduced Gradually

Revenue from direct operation of the Boston (Mass.) Elevated Railway was \$23,003 less during the month of April this year than last, but notwithstanding this handicap the company succeeded in offsetting this loss of revenue and secured a net gain for the month of \$222,134. It is anticipated by the management that if the co-operative efforts are continued the deficit which was so formidable last Fall will soon be only a memory. The outstanding deficit is as follows:

	Deficit	Surplus
Year ended June 30, 1920		\$17,079
Back pay.....	\$435,348	
Six months ended Dec. 31, 1920	387,691	
Jan. 1 to May 1, 1921..		536,773
Squantom service and other adjustments.....		34,287
Total	\$823,039	\$588,139
Net deficit, May 1, 1921..	\$234,899	

In making this statement of earnings public the following principles, enumerated by the board of trustees in connection with the readjustment of wages, were reiterated:

1. The fact that although a substantial decrease has already taken place in many items affecting the cost of living, that cost is not yet upon any settled basis so that it is peculiarly a fitting time to put in practice the belief of the trustees that to be consistent they should be as deliberate and conservative in following the cost of living when it is upon a downward trend as in following it when it is an upward movement.

2. The fact that they thoroughly appreciate the co-operation that the men have given to the management during the past year which has made possible what would otherwise be impossible in the saving of expenditures amounting to large economies; in other words, the existence of the spirit which has financial as well as other value in the conduct of this service.

3. The fact that as public officials they are in charge of a public business entirely disconnected from any private or competitive industries and that in this attitude they should be careful not to adopt as a standard for the payment of compensation any other rule than that of a full fair wage for work that is earnestly performed.

Further comment by the company follows:

Such consideration carries with it responsibilities. We all have reason to be proud of our work during the past year, but the next twelve months should still further advance our record of efficiency and economy in the interest of the car rider. There must be no idle hours; there must be no waste of material; every move should count.

Co-operation means securing all the revenue, avoiding accidents, being considerate of car riders, helping one another, conserving supplies and materials and not wasting time.

Seattle Far from Being Out of the Woods

According to the monthly report of the Seattle Municipal Railway, \$37,338, or about half the amount needed each month for bond redemption, was set aside in April. Revenues were \$529,109, against \$362,738 expenses, leaving a balance of \$116,371. The balance of \$37,338 is obtained after deducting interest and depreciation. The balance in March was \$32,069. The report said in part:

The report is encouraging, but we are far from being out of the woods. We have not set aside the money for bond redemption, and the interest money has been used to take up outstanding warrant, so that while we have a cash balance of \$98,014 at the end of the month there should be consid-

erably more to meet interest and redemption charges.

The depreciation charge has been made only on the books, the money being used to retire warrants. The light department's annual report, just at hand, shows large expenditures on replacements, financed out of the depreciation fund. The depreciation fund in that department is actual not theoretical.

Customers Offered Stock

\$2,000,000 of Eight per Cent Preferred Issue Placed on Sale in New Jersey

The Public Service Corporation of New Jersey started a campaign on May 23 to sell \$2,000,000 of its 8 per cent cumulative preferred stock to the customers of its three subsidiary companies, Public Service Gas, Public Service Railway, and Public Service Electric Company.

The campaign is under the general direction of R. R. Young, the new business agent. The sales will be made through the employees of the company or directly through the business offices. A partial payment plan will be used, a cash payment of 10 per cent at the time of purchase, and 10 per cent monthly thereafter until the entire pur-

The issue has behind it the credit of Public Service Corporation, the subsidiary companies of which in 1920 did a combined gross business of \$72,318,087, nearly \$35,000,000 more than was done in 1915, and nearly \$45,000,000 more than was done in 1910.

Statistics taken from the last annual report of the corporation give some idea of the magnitude of its transactions. The electric company in its eighteen generating stations produced more than 892,000,000 kw.-hr. in 1920, distributed it over 20,000 miles of wire carried on 176,000 poles or lead through 158 miles of conduit to 234,496 meters. In the same year the gas company produced 16,500,000,000 cuft. of gas and distributed it through 3,170 miles of main to 553,343 meters, while the railway carried 453,000,000 passengers and operated its cars a total of 60,798,000 miles.

Financial News Notes

No Provision for Interest on Notes.—No arrangements were made for the payment, exchange or extension of the \$7,750,000 of 7 per cent notes of the Kansas City (Mo.) Railways due on May 15. No interest accruing on them since that due on May 15, 1919, has been paid, and no interest on any of the company's securities has been paid since July 1, 1919. The company has been in receivership since Sept. 9, 1920.

Railway Appoints Purchase Arbitrator.—Formal notice has been received by the city from the Toronto (Ont.) Railway of the appointment of Sir Thomas White as arbitrator for the company on the board to determine the value of the assets to be acquired by the city when the railway is taken over on Sept. 1 next. Sir Thomas stated that he had not met Sir Adam Beck to discuss the name of the third member of the board, who will be chairman. If the two are unable to agree on one person, an application will be made to the courts to designate a chairman of the board.

New Operating Contract Under Negotiation.—Negotiations are under way between the Dallas (Tex.) Railway Company and the Standard Traction Company by which the cars of the Standard Traction Company would be permitted to use the tracks of the Dallas Railway into the business section of the city. The Dallas Railway on May 1 ceased operation of cars on the tracks of the Standard Traction Company, the contract entered into between these two companies having expired. The Dallas Railway at that time said that operation of cars on the tracks of the Standard Traction Company had been continued at a loss and that service could no longer be continued.

"Let Your Service Pay You Dividends"

Public Service Corporation of New Jersey
is offering patrons an opportunity to buy its

8% Cumulative Preferred Stock
On a New "Customer Ownership" Plan

From one to ten shares only—not more than ten—
will be sold to any one customer under this new plan

Every share has value behind it
and a fixed annual rate of return

In order to place this attractive security within the reach of as many householders and wage-earners as possible, payment for the stock will be accepted in convenient monthly installments. Dividends received by purchasers can be made to pay, or help pay, gas and electric bills. Public Service Corporation of New Jersey, through its subsidiary companies, is furnishing essential utility services to four-fifths of the people of the State. In the year 1920 the operating companies did a gross business of more than \$72,000,000, and the business is steadily increasing.

Can see service and stock to receive Public Service stock.

Public Service Corporation of New Jersey. Contains "Good Inside of our 'Customer Ownership' Plan" for sale of the Cumulative Preferred Stock.

The "Customer Ownership" Plan affords an opportunity to SAVE and INVEST at the same time without incurring the risks of a highly speculative venture or waiting a number of years for a new enterprise to be developed.

Public Service Corporation of New Jersey

ADVERTISEMENT OFFERING PUBLIC SERVICE STOCK

chase price is paid, being the method of sale. The subscription price is par and accrued dividends. Interest at 6 per cent will be allowed upon money paid in until the entire price has been paid.

The plan marks the start of an entirely new policy on the part of the Corporation. Never before in its history have Public Service securities been offered direct to the public, the method employed heretofore being to sell securities in large lots to investment bankers, who retailed them to the public.

Under the new system of direct sales and partial payment the corporation expects greatly to increase the number of its stockholders among the people who receive its service and thus arouse the interest of its patrons in the company's affairs. Purchasers will become partners in the enterprise with all the rights and privileges, including voting power, that go with the ownership of preferred stock.

Traffic and Transportation

Cincinnati Still Battling

Reduction in Fares May Be Secured by Deferring Collection of Franchise Tax

Following a series of conferences extending over a period of three weeks, participated in by committees representing the city administration, the Cincinnati (Ohio) Street Railway, stockholders, the directors of the company and the Cincinnati (Ohio) Traction Company, assurance has been given that a reduction in fares may be expected Aug. 1, and a still further reduction approximately by Nov. 1. Definite announcement as to this, however, cannot be made until the city indicates its consent to a modification of the franchise ordinance under which the traction company now operates.

The demands of the city are as follows:

1. That improvements of the railway as demanded by the city be made at once.

2. That steps be taken to reduce the prevailing rate of fare as early as possible.

3. That the program concerning the repairing of tracks and streets for 1921 as agreed upon be strictly carried out.

4. That needed repairs on tracks on streets not included in the regular 1921 program be made.

5. That a reduced rate of fare be provided for children of the public and parochial schools.

The Cincinnati Traction Company seems to be in accord with the demands by the committee and a letter was received by members of the committee representing the city administration, signed by W. Kesley Schoepf, president of the Cincinnati Traction Company, in which he said that if financial arrangement could be made he saw no reason why the program could not be carried out.

Mr. Schoepf seeks a postponing or deferring of the collection of the city franchise tax for years 1920 and 1921, saying that the city may reserve the right to make demand for the restoration of all or any portion thereof, as a charge against the company's gross receipts after Jan. 1, 1922. By postponing the payment of this tax, it is believed that it will be legally permissible under the obligations of the service-at-cost franchise to proceed with the reduction of the fare.

The Cincinnati Street Railway has already shown its willingness to assist the Cincinnati Traction Company in getting new capital to make improvements demanded by the city by approving the plan to lend its credit to the extent of \$650,000.

Mr. Schoepf's letter follows in part:

I am prepared to say that this company can meet the views of the city administration in these particulars conditioned upon the following:

1. That the Cincinnati Street Railway will assist the Cincinnati Traction in procuring new capital with which to make the desired and needful improvements. This new capital should not only be sufficient to meet immediate requirements but provide for the future and if possible enable the Cincinnati Traction Company to refund outstanding high rate securities at a lower rate, effecting a reduction in fixed charges on the car rider.

2. That the city of Cincinnati will agree to certain amendments to Ordinance No. 253, 1918, to provide:

(A) For deferring or postponing collection of the city franchise tax for 1920 and 1921, the city reserving the right to make demand for restoration of all or any portion thereof, as a charge against the company's gross receipts after January 1, 1921.

(B) For removing the requirements of payments into the reserve fund as provided in Subdivision H. of Paragraph 22 of Ordinance No. 253, 1918, as long as fares are higher than seven and one-half cents.

(C) That the city will promptly cooperate with the company in developing a plan for rerouting certain lines, thus relieving congestion and saving unnecessary service and thereby reducing costs of operation at the same time as improving the service rendered.

If these conditions can be met—and I can see no obstacle to their being met—I can reasonably assure you that the desired results can be brought about.

INTERCORPORATE SUIT NOT AFFECTING

Mr. Hornberger, chairman of the city committee, stated he realized the force of the argument as to the deferment of the franchise tax, since the traction company is in no financial position to pay it, but that he was prepared to say that the city would consent to the proposal. The same, he said, was true with reference to the reserve fund.

As to that portion of Mr. Schoepf's letter in which co-operation of the city is sought in developing a plan for rerouting it may be said that the city at all times has been willing to cooperate with the officials of the traction company.

Mr. Schoepf announced that whatever results would be achieved as a result of conferences alluded to, the suit for an accounting now pending against the Cincinnati Traction Company is not involved. There can be no compromise of the questions involved in that suit, Mr. Schoepf said. We will insist that the case be tried in open court and that the company be given an opportunity to prove that the charges and claims made against it in the suit are not true.

Six Cents Not Enough.—A 7-cent fare has been asked by the Little Rock Railway & Electric Company, Little Rock, Ark., in a petition filed with the city clerk to be presented to the Council shortly. The company says a raise from the present 6-cent fare is necessary since the income is just sufficient to meet operating costs. This fare was granted one year ago. The petitioners allege that the company has not paid a dividend since 1918.

More Fares Cut

Advantage of Wage Reduction Passed on to Car Rider by Eastern Massachusetts Company

In accordance with promises made to the public prior to the wage reductions just established, the trustees of the Eastern Massachusetts Street Railway announced reductions in fares on all lines, effective on May 23. In general, these changes in fares took the form of increases in the number of rides sold for one dollar the basic single cash fare of 10 cents still remaining the established unit.

The new rates of fare have been computed as nearly as possible, on the basis of giving the car-riders the entire benefit of the reduced operating expenses which will result from the 12½ per cent cut in pay for trainmen and departmental employees. The decision of the Massachusetts Board of Conciliation and Arbitration, handed down on May 14, made this cut effective retroactively to May 2. When the trustees first proposed to reduce the wage scale they made public announcement of their intention to devote the expected savings to immediate reductions in car-fares.

No official statement of the probable total reductions in payroll as compared with last year has been made, but it is variously estimated at from \$500,000 to \$750,000. During the past year a great many one-man cars have been put into service, and it is proposed to continue increasing this type of service until practically the entire system is operating on a one-man car basis.

The principal changes in fares are shown in the accompanying statement. In a number of cases where several rides are sold for a dollar a rebate of several cents is made in order to induce the passenger to turn in the ticket when it is used up. This is for auditing purposes, as the tickets take the form of a card, on which the conductor punches out one number for each ride.

In the following tabulation the average cost per ride allowing for rebate is shown in parentheses after each ticket group:

LINES NORTH OF BOSTON

Lowell-Lawrence district:	
Formerly 13 for \$1, with 8c. rebate (7.08c.)	
Now 15 for \$1, with 5c. rebate (6.33c.)	
Haverhill district:	
Formerly no tickets (10c. cash only)	
Now 13 tickets for \$1, no rebate (7.69c.)	
Lynn:	
Formerly 15 for \$1, no rebate (6.67c.)	
Now 17 for \$1, no rebate (5.88c.)	
Salem:	
Formerly 14 for \$1, no rebate (7.14c.)	
Now 15 for \$1, no rebate (6.67c.)	
Melrose-Woburn district:	
Formerly 13 for \$1, with 8c. rebate (7.08c.)	
Now 14 for \$1, with 7c. rebate (6.64c.)	
Boston to Revere, ticket rate unchanged:	
Formerly 15c. cash fare	
Now 10c. cash fare	
Boston to Lynn, ticket rate unchanged:	
Formerly 30c. cash fare	
Now 20c. cash fare	

LINES SOUTH OF BOSTON

Quincy:	
Formerly 13 for \$1, no rebate, (7.69c.)	
Now 15 for \$1, no rebate, (6.67c.)	
Brockton:	
Formerly \$13 for \$1, with 8c. rebate (7.08c.)	
Now 14 for \$1, with 5c. rebate (6.79c.)	

Six Cents Cash in Los Angeles

Continuation of the 5-cent fare by the purchase of ten tokens for 50 cents and the establishment of a 6-cent cash fare for individual rides mark the decision rendered by the California Railroad Commission on June 1 in the case of the Los Angeles Railway. The railway applied for an increase in fare last August and a hearing was conducted in October.

Various improvements in service are ordered by the decision. They include the purchase of 132 additional cars to cost \$1,400,000, the construction of additional carhouses, shops and substations and the making of track improvements, according to press reports.

A copy of the decision had not been received by the Los Angeles Railway up to the time the telegram containing this information had been filed for transmission to the ELECTRIC RAILWAY JOURNAL and an official statement was withheld by the management.

The commission estimates that two-thirds of the riders will use tokens and with the other third paying 6 cents and the natural growth in traffic, the company should receive under this arrangement a gross annual revenue of approximately \$10,120,000.

The commission stated in its opinion that the zone system would be impracticable for Los Angeles except as a last resort.

Petition to Prevent Railway Engaging in Bus Business

A fight has been started before the California State Railroad Commission to prevent the Pacific Electric Railway, Los Angeles, Cal., from entering into the automobile stage business in competition with motor passenger cars that use the highways. The Motor Transit Company, which controls and operates a large number of auto stage lines in and out of Los Angeles to surrounding towns served by the electric interurban lines of the Pacific Electric, is the principal opponent in the fight, contending that a motor bus service recently established by the Pacific Electric Railway between San Bernardino and points in the San Bernardino mountains is an illegal enterprise, and has asked the State Railroad Commission to eliminate the electric line as a competitor. According to the Motor Transit Company's petition it also operates a transportation system in the territory covered by the Pacific Electric in the district referred to.

It is stated that the proceedings instituted by the Transit Company are regarded as a test case. The decision of the State Railroad Commission, it is generally agreed, will establish the status of railroads employing motor lines to compete with those already existing.

The establishment of auto stage lines by the Pacific Electric is said to be in line with a policy announced several months ago by the officials of that company, who stated the corporation would be compelled to enter the auto-

mobile transportation business if further inroads into the company's receipts were to be prevented.

Ten-Cent Fare Suburban Lines Last Hope

At the resumption of the hearing on April 26 before the Board of Public Utility Commissioners of New Jersey on the application of the New Jersey & Pennsylvania Traction Corporation, operating between Trenton and Princeton, for an increase in fare from 7 cents to 10 cents in each of four zones between Trenton and Princeton, John J. Treacy, chairman of the commission, remarked that the concern was "harping" upon the fact that a certain amount of money was put in the company and apparently for that reason an increase of fare was expected. In addressing Sidney L. Wright, president of the concern, Commissioner Treacy said:

"Of course you understand, Mr. Wright, that this board can't give you an increase in rates merely because the property owners have put a certain amount of money in the company."

Commissioner Treacy remarked that many other things besides a loss in money to stockholders would have to govern the granting of an increase in rates to a utility company. The commissioner pointed out that operating costs had to be taken into consideration together with wages, cost of power and anything that would tend to make operating costs higher.

Mr. Wright stated that an increase to 10 cents was all that could be expected by the railway, and failing to operate on the increase the company would have to pocket the loss. President Wright admitted to Henry Hartmann, attorney of Trenton, that the 10-cent fare was merely asked for because every other means had been exhausted in an effort to make the company a financial success. Mr. Wright characterized the 10-cent fare application as the concern's "last hope."

One-Man Cars Prohibited

At a recent election the voters of Sacramento decided in favor of an ordinance prohibiting the operation of one-man cars in that city. The Pacific Gas & Electric Company, San Francisco, controls and operates the city lines, but the operating company does not intend to remove the cars from its lines in Sacramento, as they are permitted under the terms of the ordinance to have two men in charge of a one-man car. Therefore, by putting conductors on the cars the company will be within the law. It is apparent that this ordinance was fostered by union forces. It is not stated whether the company will test the constitutionality of the newly passed law.

The New York Transit Commission of New York has made its first report to the Governor. No statement has been made about the contents of the report.

Reduced Fare to Solve Jitney Problem

The Indiana Public Service Commission will reduce the fare of the Indianapolis Street Railway to 5 cents and increase the transfer charge to 2 cents for a period of sixty days, according to a decision reached following a conference with members of the City Council. The Council will order the company to reroute cars in the downtown congested district in an effort to obtain faster schedules and improved service. These measures will be taken in an attempt to enable the company to compete successfully with jitney lines, and if a decrease in "jitney" traffic is not shown at the end of the sixty days, the Council will pass an ordinance regulating the operations of "jitney" lines.

These are the outstanding points of agreements reached at the joint conference which was held in the office of John W. McCardle, chairman of the Public Service Commission, attended by all members of the Council, all members of the commission and Samuel Ashby, city corporation counsel. It was arranged as a result of testimony given the commission by officers of the railway in their petition for relief from operations of jitneys. The order for 5-cent fare and 2-cent transfer charge will be made soon unless some unforeseen event arises to cause reconsideration, Mr. McCardle said.

This appears to be the best solution of the problem of "how to compete with the jitney." Since the inception of the 6-cent fare the jitneys have been doing an enormous business while the result of operation on the Indianapolis Street Railway from April 18 to May 17, 1921, shows a decrease of 851,109 revenue passengers.

Seven Cents in Norfolk

The City Council of Norfolk, Va., has passed an ordinance granting the Virginia Railway & Power Company a 7-cent fare with free transfers until Jan. 1, 1922, unless the granting of a new franchise automatically cancels the temporary rate sooner. The increase was based on a report by Charles E. Ashburner, city manager, who upheld the contention of the officials of the company that its operations are resulting in a net loss, which will force the company into the hands of a receiver unless relieved. The ordinance takes effect thirty days from the date of passage, but it will not be placed in operation until a similar increase on the county lines to be asked by the Virginia Corporation Commission becomes effective. An audit of the company's books, according to Mr. Ashburner, showed a net deficit of \$218,229 for nine months, after deducting net earnings, the depreciation charges, interest on bonds, and payment on guaranteed stock. He estimated a 7-cent fare will increase revenue for nine months by \$251,590, or about \$33,000 more than the money needed to pay the interest charges.

Limited Interurban Bus Service

The Smith-Thompson Transportation Company, Everett, Wash., which when incorporated will be known as the "Interurban Motors Company," has placed orders for six White chassis, which have been delivered, and the bodies are now in course of construction. Four of the cars will be of the type used at present between Olympia and Tacoma, but two will be limited cars, having many new features.

Schedules have been completed which will yield a half hour service between Everett and Seattle, hourly service between Everett and Mt. Vernon by bus and two-hourly service between Everett and Bellingham. Under these conditions seven through connecting trips per day will be made between Bellingham and Seattle each way and the time will be four hours and four minutes. The fare will be nearly \$1 cheaper than the steam road fare for a round trip.

The new service will link up the Northern and the Southern divisions of the Pacific Northwest Traction Company.

Commission Would Have Railway Operate Buses

President Emmons and General Manager Flowers of the United Railways & Electric Company, Baltimore, Md., conferred recently with members of the Public Service Commission on the bus situation. The commission is desirous of having the railway establish bus service in certain sections of the city which do not produce sufficient traffic to justify the laying of tracks for regular trolley service. It is also desired by the commission that the railways establish bus service on East Fayette Street in order that the number of "fly-by-night" machines on that street may be lessened and the traffic concentrated in a company of financial responsibility.

At the same time there was some discussion of taking the blue line buses off Charles Street, which is becoming greatly congested, and transferring them to St. Paul Street, at least as far as North Avenue. These buses are run by the United Railways.

The railway officials are said not to look with favor on the establishment of bus lines as a supplemental service, but President Emmons expressed a desire to go as far as the company's finances would permit in meeting the wishes of the commission. Nothing definite was determined upon at the conference, but Commissioner Whitman stated that he was at work on a plan for handling the bus situation, which will be shown to the railway's officials later.

The jitney business in Baltimore is practically confined to one small line operating cheap buses on East Fayette Street. It would appear to be the thought of the commission to determine whether there is an actual need for this line, and, if so, whether it would not

be profitable to have it operated by the railway, which could be held to more responsible operation than the present private owners.

Transportation News Notes

Fares Remain Ten Cents.—The Mississippi Railroad Commission recently ruled that the Meridian Light & Railway, Meridian, Miss., must retain the 10-cent cash fare in that city. Children's tickets will be 5 cents. The company must issue tickets at the rate of six for 45 cents, each ticket good for one ride and one transfer. The commission's decision will abide for six months.

Council Approves Increase.—The City Council of Flint by a vote of eight to four recently approved a resolution authorizing an increase in fares on the Flint city lines of the Detroit United Railway from 5 to 6 cents. This action was taken on recommendation of a citizens' committee which had made a thorough investigation of the company's request for a higher fare. An examination by Prof. H. E. Riggs of the committee showed that the Flint city lines had been losing money for several years.

Suburban Fare Advanced.—The Dallas (Tex.) Railway has announced an 11-cent fare to Highland Park, which includes the line to Southern Methodist University. The company has been charging only 6 cents to Highland Park, which maintains corporate existence separate from the city of Dallas. A fare of 6 cents will be charged to the city limits of Highland Park, and an additional charge of 5 cents will be collected for those who ride beyond the boundary. It is likely that tickets will be sold to students at the university so that no hardship will be worked on them.

Seven-Cent Fare Sustained.—The Public Service Commission of Pennsylvania has upheld the 7-cent fare on the lines of the Shamokin-Mt. Carmel Transit Company. This finally puts an end to litigation that has extended over a period of four years. The case was started in June, 1917, with the borough of Ashland, the borough of Centralia and the mine locals of Centralia, Mt. Carmel, Kulpmont and Shamokin making the complaints. In its findings, the commission allowed a valuation of \$1,300,000 on the property, and said that the profits of \$56,848 for the year 1920, were not excessive, yielding only 4½ per cent. On June 4, 1917, the company abolished the custom of selling tickets, and substituted in place thereof, a 5-cent cash fare for each zone. On Jan. 15, 1918, the company made a further increase by substituting a 6-cent cash fare in each zone for the

5-cent cash fare. Subsequently the motormen and conductors struck for higher wages and the War Labor Board allowed the men a substantial increase. To meet this increase in wages, the company, raised the fare from 6 cents to 7 cents, which increase went into effect Sept. 26, 1919.

Official Freed of Charge.—New York City Comptroller Charles L. Craig was recently relieved by Judge Manton in the Circuit Court of a contempt charge found by Judge Mayer carrying a sixty-day jail punishment. The charge grew out of a communication between the defendant and Public Service Commissioner Nixon, in which Mr. Craig is said to have asserted that the federal justice prohibited an investigation by the city into the records of the Brooklyn Rapid Transit receiverships. In his findings Judge Manton says: "There is no divinity about the office or duties of a judge which makes him free from criticism. The statute requires a misbehavior which causes an obstruction of the administration of justice."

Company Voluntarily Reduces Fares.—W. J. Harvie, general manager of the Auburn & Syracuse Electric Railroad, Auburn, N. Y., recently announced a fare reduction in Auburn to 7 cents. The company received permission from the Public Service Commission to sell fourteen tickets for \$1 on the city lines and eleven lake tickets for the same amount. The straight fare in Auburn is 8 cents and 10 cents to Owasco Lake. In explaining the voluntary reduction Mr. Harvie said: "The public took the fare increases of the past two or three years in a big way. We have cut the cost of operation by the installation of one-man cars and it is no more than right that the people using the trolley share in this saving." The one-man car system in Auburn was put into effect on May 1. The company has reported that this method has been working out very satisfactorily.

Sustains Seven-Cent Fare.—The city of Fort Wayne, Ind., has lost its fight before the Public Service Commission against the Indiana Service Corporation for a reduction in fares, for the commission has announced the indefinite continuance of the 7-cent cash fare, with four tickets for 25 cents. The present rate of fare was established in the fall of 1920. The city sought a cash fare of 6 cents, or nine tickets for 50 cents. The commission in its order said that for the six months ended March 31 the railway made a return of 8 per cent on its investment, which was said to be \$2,846,358. "This income shows that during the best six months of the year from the street railway standpoint, the months in which the maintenance work is normally the least and the number of revenue passengers the greatest, that the company earned no more than a reasonable return on its investment," the order said. The final conclusion of the commission is that "the petitioner will not earn in excess of a reasonable return under the fares now in effect."

Personal Mention

Mr. Kubu Returns to Cleveland Claims Department

Joseph S. Kubu, for nine years claim agent of the Utica Lines of the New York State Railways, has been appointed assistant superintendent of the accident department of the Cleveland (Ohio) Railway. In accepting the appointment Mr. Kubu returns to old friends and associates in a familiar field, as he had been successively investigator, adjuster and assistant claim agent of the Cleveland Railway before going to Utica in 1912. Mr. Kubu's long experience in claims work, his wide acquaintance with men in this department of public utility service, and an active participation in the work of the American Electric Railway Claims Association led to his election, in 1919, to the position of secretary, which he still holds.

His work with the New York State Railways had been of the highest order and has merited the attention of many traction companies from which he received offers. He had refused all inducements until his old employers made him the proposition of taking charge of their claim department. Mr. Kubu's home is in Cleveland.

Herbert E. Cady, Syracuse, succeeds Mr. Kubu at Utica. He has been assistant to Ansel D. Brown, claim agent for the New York State Railways at Syracuse, and is very popular among the railway officials of both cities.

Messrs. Carmichael and Bucher Promoted

D. C. Carmichael has been elected assistant secretary and E. R. Bucher has been elected assistant treasurer of the Southern Power Company, Charlotte, N. C. Mr. Carmichael and Mr. Bucher will share between them the duties formerly performed by E. C. Marshall, who was elected president of the Southern Public Utilities Company.

Also at the annual meeting of the Mill Power Supply Company Messrs. Carmichael and Bucher were elected secretary and treasurer respectively. W. G. Thomas, who had been manager of the company for the past four years, was made president and manager, succeeding N. A. Cocke as president.

Mr. Carmichael has been with the Southern Power Company for about ten years, serving a considerable part of that period as secretary to W. S. Lee. Mr. Bucher has been with the company since 1905, having been auditor for the company for a number of years past. Both are recognized by the company as young men of splendid qualifications.

The Mill Power Supply Company is the purchasing organization for the

Southern Power Company, the Southern Public Utilities Company, the Piedmont & Northern Railway and other Duke interests in that section.

Steps Up to Managership

H. W. Witherspoon Promoted from Dispatcher to General Superintendent of Stark Electric Railroad

H. W. Witherspoon has been appointed general superintendent of the Stark Electric Railroad, with headquarters at Alliance, Ohio, to succeed M. L. Mowry, who recently resigned.

Mr. Witherspoon is a steam railroad man, having received his early railroad training as a telegraph operator, entering the service of the Pennsylvania Railroad on the Cleveland & Pittsburgh



H. W. WITHERSPOON

Division in 1901. He resigned two years later to enter the employ of the New York Central as an agent and telegraph operator, being promoted to the dispatcher's office late in the year of 1905. After holding the position of chief train dispatcher in 1917 he resigned a year later to become connected with the Stark Electric Railroad.

While in the service of the New York Central Mr. Witherspoon had the honor of being the first train dispatcher to make use of the telephone in dispatching trains on a steam railroad. During his service with that road he contributed much toward the successful use of the telephone in railroad service.

Mr. Witherspoon will have entire charge of the operation of the Stark Electric Railroad Company's property. While his rise from the position of dispatcher to general superintendent is unusual it is certainly evidence of his ability and knowledge of the electric railway field.

The Stark Electric Railroad is an

interurban which operates high-speed passenger and freight service, connecting Canton, Louisville, Alliance and several other Ohio towns. Besides operating a trackage of about thirty-six miles it owns and controls a pleasure park near Alliance.

Arthur W. Senter, superintendent of Division 4, Boston (Mass.) Elevated, left in April for Christiania, Norway, where he will investigate street railway conditions. From there he will proceed to Stockholm, Sweden, covering as many traction properties as possible, arriving home the early part of June.

Harrison Williams was elected chairman of the board of directors and chairman of the executive committee of the North American Company on May 20. As chairman of the board he is acting president. Mr. Williams became a director of the North American Company in June, 1920, when Clarence Dillon, George P. Miller, Edward N. Wells, and Frank L. Dame were also elected to the board of directors.

Walter A. Shaw, for more than seven years engineering member of the Public Utilities Commission of Illinois, has returned to practice as a consulting engineer, with offices in Chicago, Ill. He will give particular attention to public utility rate cases, reports for banks and investors, public utility and industrial management, operation and construction, and all branches of municipal engineering and construction work, including designing and supervision.

H. E. Blain. C. B. E., assistant manager of the London Electric Railway and the Underground group of companies in London, who arrived this week in New York on the Olympic, will be joined by two other officers of his company shortly. These are C. S. Louch, controller and accountant, and J. L. B. Lindsay, assistant secretary to the treasurer. These gentlemen expected to sail from England on May 31 and will join Mr. Blain in New York for a trip of investigation of electric traction matters in this country.

C. H. Evenson and C. E. Jones have been appointed assistants to the general superintendent of transportation of the Chicago Surface Lines. Mr. Evenson is thirty-six years old. He has been connected with transportation companies in Chicago since 1908. For three years he was secretary to the president of the Calumet & South Chicago Railway, and for eight years he was secretary to the president of the Chicago City Railway and the Chicago Surface Lines. In February, 1920, he was transferred to the transportation department. Mr. Jones entered the service of the Chicago City Railway as a gripman in 1882. Three years later he was made a starter and in 1897 he was appointed supervisor. In 1906 he was made an assistant division superintendent and in 1912 was promoted to the position of division superintendent.

New Interests in Detroit United

Frank W. Brooks Has Resigned as President and Alex Dow of the Detroit Edison Has Been Elected a Director

Frank W. Brooks, president of the Detroit United Railway and its subsidiary properties, tendered his resignation as president and member of the board of directors at its meeting on May 25. Alex Dow, president and general manager of the Detroit Edison Company, has been elected to the board of directors. He will represent new Eastern financial interests which have entered the company. Malcolm McIntyre has resigned from the position of night superintendent to accept the appointment as general superintendent of the Mobile (Ala.) Railway.

PRESIDENT BROOKS resigned because of failing health. It was with unanimous expression of regret the resignation was accepted by the directors. Mr. Brooks' successor has not yet been named. He has made no definite plans other than to rest from business affairs.

Owing to Mr. Brooks' failing health the resignation has been expected for some months past, although it was the hope of his associates that he would be able to continue his responsibilities during the present fiscal year. However a more recent development of his

When the Rapid Railway, through financial negotiations, passed into the control of the Detroit United Railway in 1903 Mr. Brooks was made assistant general manager. Within a short time he relieved Jere C. Hutchins, at that time president, of the detailed work of general manager. In February, 1916, Mr. Brooks was elected one of the vice-presidents of the company. In June, 1916, he was made president following the retirement of Mr. Hutchins to become chairman of the board of directors.

MR. DOW FAVORABLY KNOWN LOCALLY

Alex Dow, who has accepted the appointment to the board of directors of the Detroit United Railway, is president and general manager of the Detroit Edison Company and a member of the Detroit Water Board. He has always shown a marked leadership in establishing ideals of public policy, although more directly in connection with the power and lighting utilities than with railways. His ability has been so directed as to instill into the employees of his own company those ideals in such a way as to give a practical demonstration of their working.

It has been principally through Mr. Dow's sound business judgment and through his economic understanding that the Detroit Edison is a company which now represents the consolidation of several others. His policy has been to maintain the property and at the same time pay enough return on the investment so that capital would be attracted. His system of training his men to meet the public in an open-minded way and to believe the customer is right has proved most successful.

Mr. Dow's familiarity with conditions in Detroit mark him as one well able to participate in formulating the future policies of the Detroit United Railway.

After the announcement that he had been appointed to the board Mr. Dow issued the following statement:

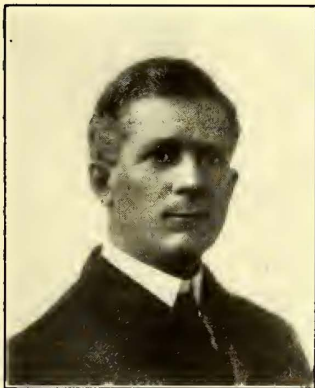
I have been asked by Harrison Williams, New York, to serve with him as a director of the Detroit United Railway. He and some friends of his have recently become interested in the Detroit United Railway. Mr. Williams suggested that I could be of help in dealing with the complications of our local street railway service, which he wants to see straightened out as quickly as possible.

J. C. Hutchins, chairman of the board of the Detroit United Railway, tells me that he and the other senior directors will be glad to have me on the board. I have agreed to serve for the present and to continue so long as I am needed, or so long as I find I am working to the common good. I do not know what will be undertaken first or what part I will be asked to do personally. It looks like real work that I did not seek, but cannot honestly shirk.

Following the announcement of Mr. Brooks' resignation came the news that Malcolm McIntyre had severed his connection with the company to become general superintendent of the Mobile (Ala.) Railway.

Mr. McIntyre became identified with the Detroit United Railway as agent of the Rapid Railway at Algonac in 1903. Later he was appointed foreman at the Canfield carhouse, Mt. Clemens. He was subsequently transferred to Detroit, becoming foreman at the old Clark Avenue carhouse, and then assistant superintendent of the Jefferson line. After serving as superintendent of the Orchard Lake Division he resigned from the Detroit United Railway in 1908 to become general manager of the San Francisco, Napa & Calistoga Railroad.

He returned to Detroit in 1914 and became identified with the Detroit United Railway's consulting engineering department. Later he was made special car agent, then night superintendent of the Detroit city lines. The past few months he has been in the company's schedule department but still retained the title of night superintendent.

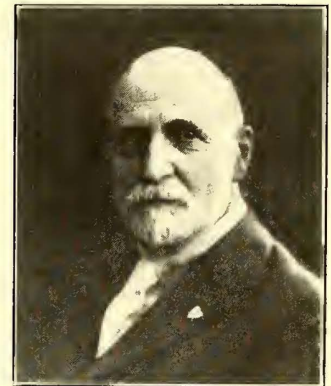


F. W. BROOKS

physical ailments has required him to surrender his labors with the company.

The career of Mr. Brooks is virtually the history of interurban railway development, especially in the vicinity of Detroit. Mr. Brooks was born in Waco, Texas, March 4, 1865. He was educated in private schools in Waco and was graduated from the Texas State College, where he specialized in engineering. In 1882 he became identified with the construction of the New Orleans & Texas Pacific Railway. In succession he followed his chosen engineering work with the Queen & Crescent Railway and the Louisville, New Orleans & Texas Railway, afterward part of the Illinois Central.

From steam roads Mr. Brooks turned to the field of electric railway construction and operation in 1895, when he became general manager of the Rapid Railway, then under construction and one of the first lines in the country to develop the use of the trolley for the delivery of freight and mail as well as to carry passengers between adjoining communities.



ALEX DOW

At a meeting planned to be held in New York on June 1 it was proposed to consider problems confronting the company and to fix the scope of Mr. Dow's activities, but at the last minute the meeting was put over until June 3.

As previously indicated the resignation of Mr. Brooks was not unexpected. It is the most important, however, of a series of changes in the operating personnel extending over a period of some months. One of the first officials to resign was Mr. Rifemberick, consulting engineer. He retired in January to start a private consulting engineering practice. Following him W. E. Cann left the company in February to become street railway commissioner at Toledo, Ohio. Changes then occurred in the status of F. W. Brooks, Jr., and E. H. Ives with the company. Mr. Brooks was promoted to assistant to the president and general manager, the position formerly held by Mr. Cann. Mr. Ives then succeeded Mr. Brooks to the office of assistant general superintendent.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

Electric Railway Cars Built in 1919 Number 2,352

Census Bureau's Preliminary Figures Show Decrease Over 1914—Also Fewer Steam Passenger Cars

A preliminary statement of the general results of the 1919 census of manufacturers with reference to the construction of steam and electric railroad cars has been issued by the Bureau of the Census, Department of Commerce. Returns were received in 1919 from 121 establishments which manufactured 162,511 steam and electric railroad cars, valued at \$403,517,000, these figures including such cars as were built in railroad repair shops, and as subsidiary products by establishments engaged primarily in other lines of manufacture.

The statistics for 1919 and 1914 are summarized in the following table. These figures are only preliminary and are subject to further change.

CONSTRUCTION OF CARS FOR STEAM AND ELECTRIC RAILROADS		
	1919	1914
Total cars built:	162,511	137,823
Number	162,511	137,823
Value	\$403,517,000	\$164,960,000
Steam railroad cars:		
Number	160,159	134,960
Value	\$389,078,000	\$154,797,000
Passenger:		
Number	294	3,568
Value	\$ 5,602,000	\$ 45,245,000
Freight and other:		
Number	159,865	131,392
Value	\$383,476,000	\$109,552,000
Electric railroad cars:		
Number	2,352	2,863
Value	\$ 14,439,000	\$ 10,163,000

Air-Break Circuit Breakers on Short Deliveries

Market Is Improving but Not Due to Electric Railway Buying—Prices Lower in Some Quarters

Although the market for air-break circuit breakers can be characterized as only fair, nevertheless reports from manufacturers indicate a real upward trend in business. In general March has been better than February and April better than March, while May has started out at a still better rate than April. Much of this business, however, has resulted from intensive sales efforts and has not come by any waiting policy. The market presents a spotty tone at times rather than an even flow of business. But the total adds up fairly well, and it is felt that by fall business will have picked up considerably.

A feature of the ordering is the quick shipments that are so often required. Apparently customers have waited till the last moment to order, and generally they have been accommodated. Shipments from factory

stock are commonly made, and up to two weeks is about as long as is necessary to fill a bill. Whole panels using air-break equipment seldom take more than three weeks now. Much of this air-break equipment can be stocked and some manufacturers are working toward this end.

Industrial plant buying is very quiet. Utilities are providing considerable activity, and the same can be said for hotels, apartment houses, etc., for use on either street service or isolated plant lines. For the large station boards there is little market at present. Elec-

tric railway buying both for stations and for substations is reported extremely dull.

Factory operation is well below capacity, probably 50 per cent, and overhead and labor charges are still heavy under these conditions. Raw-material prices are down considerably, it is true, but with labor entering into the breaker cost so materially certain producers have made no change in prices. On the other hand, there have this year been recessions from the peak of from 10 per cent to 25 per cent by certain manufacturers.

Special Trackwork Orders for Repairs

General Situation Quiet, Though One Large Producer Reports Improvement in Electric Railway Buying—Wage Decision Expected to Stimulate Steam Railroad Activity

Although one large producer of special trackwork in the electric railway field reports that orders show quite an improvement recently, the general situation both in the girder and T-rail trackwork markets appears to be quiet. Isolated and concentrated activity in a few sections of the country rather than a general improvement account for the increase in buying noted above. It is true, however, that street railways have been more active than steam railroads in this market of late. Orders, of course, represent pressing repair needs, for the most part, rather than new track extensions. Steam road business remains flat, though signs of an awakening activity are noted in the slightly increasing inquiries that some producers are receiving. The export market is absolutely dead in both fields.

There was a fair amount of girder and T-rail business placed around the first of the year, but since that time buying has held off despite the large potential demand that is existent. Expectations of lower prices, money tightness and need of lower labor costs are factors which have largely been responsible for this. Producers are divided as to whether an increase in demand may be expected later this year. One view holds that as this business is so largely seasonal, conditions will not improve until the spring of 1922. Others, however, are looking forward hopefully to the last quarter of this year.

This latter view finds some confirmation in the decision of the Railroad Labor Board, just announced, making reductions in the scale of pay of railway workers averaging 12 per cent effective July 1. The wages of section men are reduced approximately 18 per

cent, however, and with this impetus to lower track construction costs it is not illogical to expect an increase of steam railroad activity.

Deliveries at the present time are reasonably prompt and do not seem likely to become pushed despite the fact that operation in this field is down to low levels. Special trackwork makers who do not roll their own rails are carrying comparatively low stocks but are able to replenish them as needed for steel mills can furnish rails in six weeks' or less time. Producers are keen for business and with the quality of present competition prices on special trackwork are being shaded. Deliveries of ordinary girder rail work probably average four to six weeks and T-rail orders can be filled with even greater promptness.

Five Million Street Railway Lamps Sold in 1920

Percentage Is Slightly Smaller in 1920 Than in 1919, but Total Sales Are Greater

Sales of street railway lamps in the United States during the year 1920 amounted to 3.2 per cent of the total tungsten filament vacuum type lamps sold. In 1919 the figure was 3.3 per cent and in 1918 it was 3.8 per cent. During 1920, then, of the 161,000,000 vacuum type tungsten filament lamps sold, 5,152,000 must have been street railway lamps. In 1919 about 4,719,000 street railway lamps were sold out of a total of 143,000,000 tungsten filament vacuum type large lamps.

There were 41,000,000 lamps of the gas filled type with tungsten filament sold during the year, bringing the total

tungsten filament lamp sales to 202,000,000. In addition 9,000,000 carbon lamps were sold in 1920. Carbon sales now represent only 4½ per cent of total large lamp sales. In 1919 it was about 7 per cent. The preceding figures were taken from the report of the lamp committee before the National Electric Light Association in convention at Chicago this week.

Prompt Shipments Rule for Carbon Brushes

Buying of Brushes by Traction Interests Is Still Light and Stocks Are Not Being Built Up There

Manufacturers of carbon brushes quite uniformly report a quiet market for their product this spring. With industrial operation at its present low point in so many lines of activity throughout the country fewer motors are being run and fewer brushes are being bought. On the other hand, in certain lines, such as the steel industry, opportunity is being taken of slack production to overhaul electrical equipment, and there the demand for replacement brushes holds up fairly well. Electric railways are not endeavoring to carry surplus stocks, and their buying is of the hand-to-mouth order. Central-station companies at the present time are buying most nearly to their normal requirements.

There are signs of better business ahead, however; in fact, in certain quarters it is stated that the carbon-brush business in May represented an improvement over the previous three months. Producers as a rule are proceeding cautiously, nevertheless, on the supposition that the next few months

may be lean ones. Production is down to 50 to 75 per cent of capacity, inventories being reduced accordingly.

Stocks of the semi-finished products are in ample shape to take care of customers, however, and shipments at present are very prompt. Prices are still at their peak except with one producer who is selling brushes at their present replacement cost, and this, it is stated, figures about a 10 per cent reduction. Other manufacturers are quoting on a price basis which has remained constant since the end of 1918.

\$1,400,000 in Cars for Los Angeles

In a decision rendered June 1 fixing the fares for the Los Angeles (Cal.) Railway, the Railroad Commission of California has ordered various improvements in service. Included among these is the purchase of 132 additional cars to cost \$1,400,000.

Large Fare Register Order Placed

The Philadelphia Rapid Transit Company has placed an order with the International Register Company for 2,654 single-dial registers of the R-7 type. The railway already has 2,900 registers of this type in use and the new order will bring the total number on this property up to over 5,500. The new registers will be installed on cars already equipped with cash fare registers, for the purpose of recording tickets as well. A second register was placed on each car rather than discard those already in use and substitute a double-dial register. Of the registers already in use in Philadelphia 350 were purchased in 1901 and 1902 and 2,200 in 1908 and 1909.

Rolling Stock

Pacific Northwest Traction Company, Everett, Wash., will replace all old-type cars on its lines in that city with new Birney safety cars. Several cars have been replaced and others will be added in the near future.

Track and Roadway

Ontario Power Commission, Ontario, Can. — The town of Walkerville will not press the Ontario Power Commission for any new lines on Ottawa Street and Monmouth Road as planned. By waiting a year Councillor Calderwood says the commission can save the municipalities many thousands of dollars in construction costs.

Union Traction Company, Anderson, Ind.—The Union Traction Company of Indiana has begun improvements in its track through Hartford City, Ind. The cost will be \$10,000.

Boston & Eastern Electric Railroad, Boston, Mass.—The Committee on Railroads gave a hearing recently on the petition of the Boston & Eastern Electric Railroad for extension of time to April, 1924, to build and operate the railway and tunnels which were provided in the act incorporating the company in 1911. There was no opposition to the hearing.

Nuevo Laredo, Mexico.—Contract for reconstruction of the railway lines in Nuevo Laredo, Mexico, just across the Rio Grande from Laredo, Tex., has been awarded by Luis Barreda, president of the company, to H. R. Mason, of Laredo.

NEW YORK METAL MARKET PRICES

	May 4, 1921	June 1, 1921
Copper ingots, cents per lb.	12.62½	13.25
Copper wire base, cents per lb.	14.50	15.00-15.25
Lead, cents per lb.	4.75	5.00
Nickel, cents per lb.	41.00	41.00
Zinc, cents per lb.	5.45	5.20
Tin, cents per lb.	31.87½	31.50
Aluminum, 98 to 99 per cent, cents per lb.	28.60	28.00

OLD METAL PRICES—NEW YORK

	May 4, 1921	June 1, 1921
Heavy copper, cents per lb.	10.00 to 10.50	10.75 to 11.00
Light copper, cents per lb.	7.50 to 8.00	8.25 to 8.37½
Heavy brass, cents per lb.	5.50 to 5.75	5.25 to 5.50
Zinc, old scrap, cents per lb.	2.87 to 3.00	2.50 to 2.75
Yellow brass, cents per lb.	3.75 to 4.00	4.00 to 4.50
Lead, heavy, cents per lb.	3.75 to 3.90	4.25 to 4.50
Steel car axles, Chicago, per net ton	14.00 to 14.50	14.50 to 15.00
Old car wheels, Chicago, per gross ton	13.50 to 14.00	13.50 to 14.00
Steel rails (short) Chicago, per gross ton	13.00 to 13.50	14.00 to 15.00
Steel rails (rerolling), Chicago, gross ton	12.50 to 13.00	13.50 to 14.00
Machine shop turnings, Chicago, net ton	5.00 to 5.50	3.50 to 4.50

ELECTRIC RAILWAY MATERIAL PRICES

	May 4, 1921	June 1, 1921		May 4, 1921	June 1, 1921
Rubber-covered wire base, New York, cents per lb.	16.00	16.00	Galvanized wire, ordinary, Pittsburgh, cents per lb.	3.70	3.70
Weatherproof wire base New York, cents per lb.	15.50	15.50	Car window glass (single strength), first three brackets, A quality, New York, discount*	82%	82%
Standard Bessemer Steel Rails, per gross ton	45.00	45.00	Car window glass (single strength), first three brackets, B quality, New York, discount	82%	82%
Standard open hearth rails, per gross ton	47.00	47.00	Car window glass (double strength, all sizes, A quality), New York, discount	83%	83%
T-rail, high (Shanghai), per gross ton, f.o.b. mill	Waste, wool, cents per lb.	11 to 17	11 to 17
Rails, girder (grooved), per gross ton, f.o.b. mill	Waste, cotton (100 lb. bale), cents per lb.		
Wire nails, Pittsburgh, cents per lb.	3.25	3.25	White	9.00 to 13.00	9.00 to 14.00
Railroad spikes, drive, Pittsburgh base, cents per lb.	3.40	3.40	Cl red	7.00 to 11.00	6.50 to 12.00
Tie plates (flat type), cents per lb.	2.75	2.75	Asphalt, hot (150 tons minimum), per ton delivered	33.00 to 35.00	33.00 to 35.00
Tie plates (brace type), cents per lb.	2.75	2.75	Asphalt, cold (150 tons minimum, pkgs. weighed in), per ton	33.00 to 36.00	33.00 to 36.00
Tie rods, Pittsburgh base, cents per lb.	6.00	5.50	Asphalt, filler, per ton	36.00	36.00
Fish plates, cents per lb.	2.75	2.75	Cement, New York, per bbl.	3.20	3.20
Angle bars, cents per lb.	2.75	2.75	Linseed oil (raw, 5 bbl. lots), New York, per gal.	.63	.78
Rail bolts and nuts, Pittsburgh base, cents per lb.	4.50	4.50	Linseed oil (boiled, 5 bbl. lots), New York, per gal.	.65	.80
Steel bars, Pittsburgh, cents per lb.	2.10	2.10	White lead (100 lb. keg), New York, cents per lb.	.13	.13
Sheet iron, black (24 gage), Pittsburgh, cents per lb.	3.85	3.85	Turpentine (bbl. lots), New York, per gal.	.67 to .68	.65
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.	4.55	4.55			
Galvanized barbed wire, Pittsburgh, cents per lb.	4.10	4.10			

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

The street car tracks were partly torn up and the electric plant put out of commission by Huertistas in 1914 and the street cars of the Mexican city have not been operated since that time. The lines will be rebuilt and power plant and rolling stock put in first-class condition, it is announced.

Public Service Railway, Newark, N. J.—The Public Service Railway will pay \$1,500 as its share of the proposed improvement of Belmont Avenue, Paterson, with the understanding that the company will be relieved of any further responsibility this year. The Board of Freeholders will probably take final action shortly so that bids can be solicited for the contract and the improvement begun as soon as possible.

International Railway, Buffalo, New York.—The International Railway has agreed to undertake almost \$1,000,000 worth of track improvements in Buffalo immediately. There will be no extensions under the program already outlined.

Southern Public Utilities Company, Charlotte, N. C.—The Southern Public Utilities Company will superintend the laying of car track in connection with the plans of the Charlotte Construction Company to include a loop of about one mile over an area that is expected to be built up shortly with modern residences. This plan for extending the car line that now ends on East Boulevard, Dilworth, to include the above-mentioned loop and acquisition of about eighty more lots in Dilworth by the Dilworth Building Company was announced recently by E. D. Latta, of the Charlotte Construction Company, and T. T. Cole, of the Dilworth Building Company.

Kitchener, Ont.—The Kitchener Light Commission announced that the street car service will be extended to the eastern limit of the city. The commission will double-track the right-of-way some time this year.

Toronto, Ont.—The Private Bills Committee of the Ontario Government passed a bill recently permitting the city to install a cable for the civic railway at a cost of \$31,650.

Philadelphia (Pa.) Rapid Transit Company.—The Philadelphia Rapid Transit Company will establish a new line on Forty-second Street from Chester Avenue to Market Street. The line will replace the Hog Island line which was discontinued when the Hog Island shipyard closed.

Dallas (Tex.) Railway.—The Dallas Railway so far has not given its approval to plans offered for relieving traffic on Main Street by taking cars off this street and rerouting them on other streets. A majority of the board of city commissioners has expressed approval of the plan and the City Plan Commission has recommended that the tracks be removed from Main Street. The Dallas Railway, however, has planned to keep its tracks on Main Street as far east as Preston Street.

Galveston (Tex.) Electric Company.—The Galveston Electric Company, which owns and operates the car lines in Galveston, has been asked in a resolution adopted by the City Commission to consider the building of an extension to serve that portion of the city known as the "West End," which includes all that portion of the waterfront and industrial district back of the wharf west of Thirty-third Street. This district could be served, it is pointed out, by the construction of a line from Broadway at Forty-first Street to Avenue G, then on Avenue G to Forty-fifth Street. Raymond G. Carroll, general manager of the Galveston Electric Company, has expressed approval of the proposed extension, declaring that he believes the service can be provided at a cost of little more than \$100,000.

Wichita Falls (Tex.) Traction Company.—The Wichita Falls Traction Company announces that it soon will build another extension besides the one out Indiana Street mentioned in the ELECTRIC RAILWAY JOURNAL for May 7, but the routing of the second line has not been determined upon. Announcement that these lines would be built was made with the request for withdrawal of application for franchise for another contemplated line. The improvements will represent an outlay of approximately \$100,000.

Power Houses, Shops and Buildings

Petaluma & Santa Rosa Railroad, Petaluma, Cal.—The Petaluma & Santa Rosa Railroad is installing a 300-hp. motor generator set, automatic in its operation. It is situated at the top of the grade out of Petaluma at Stony Point and is to be used in assisting heavy freight trains over the hill.

Professional Note

Allan V. Garratt, hydraulic engineer, has opened an office at 176 Federal St., Boston, Mass., for consultation and advisory work. Mr. Garratt was formerly chief engineer of the Lombard Governor Company and more recently consulting hydraulic engineer to Lockwood, Greene & Company, engineers.

Trade Notes

The Exeter Machine Works, Inc., West Pittston, Pa., has recently placed on the market a new "Exeter" rotary pump (Feuerherd Patents).

The Automatic Boiler Cleaner Company, New Orleans, La., has placed on the market a mechanical boiler cleaner for any type and size of boiler.

C. H. Wheeler Manufacturing Company, Philadelphia, Pa., manufacturer of condensers, pumps, cooling towers, etc., is opening a new branch office in Boston on June 1 at 53 State Street, Room 613.

Standard Underground Cable Company, Pittsburgh, announces its purchase of a 12-acre tract in St. Louis on which in the near future a large plant is to be erected for the manufacture of cable and other forms of insulated wire, supplementing its four other factories. A million-dollar addition is now being made to its plant in Pittsburgh.

Pacific Clay Products Company, American Bank Building, Los Angeles, Cal., will start work on a new factory at Los Nietos for the manufacture of firebrick and refractory shapes. Larger capacity will be available than in the old plant which was recently destroyed by fire, and it is expected this will be absorbed by distribution on the West Coast.

The Steel Fabricating Corporation, manufacturer of Stefcoc readybuilt steel buildings, announces the completion of its new works and general offices at Michigan City, Indiana, and the removal to that city from Harvey, Ill., of its executive headquarters. The new plant, with its 175,000 ft. of additional floor space, more than trebles present capacity.

P. W. Wood, formerly sales engineer, The Buda Company, has established a railway sales agency at 811 Canal Bank Bldg., New Orleans, La. Among other accounts, Mr. Wood will handle the products of the Buda Company, the Chillingworth Manufacturing Company and the Track Specialties Company. He will also handle a complete line of track, car and overhead equipment for electric railways.

Combustion Engineering Corporation, New York City, manufacturer of mechanical stokers, furnace equipment, etc., has changed the location of its Philadelphia office to tenth floor, Finance Building. This territory is under the management of W. C. Stripe. The change was brought about by the development of business which entailed increasing the sales organization and adding a new service department, thereby necessitating larger quarters. The Philadelphia office it is stated, is now in a position to render as complete service as the home office.

New Advertising Literature

Railroad Electrification.—The Westinghouse Electric & Manufacturing Company has issued descriptive leaflet 3,450, on the Hoosac tunnel electrification, completed ten years ago.

Pinions.—R. D. Nuttall Company, Pittsburgh, Pa., is sending a letter to operating men in the electric railway industry, inclosing bulletin No. 30, dealing with drop-forged steel pinion blanks.

Cutting Metal.—Haynes Stellite Company, 30 East Forty-second Street, New York City, has issued two booklets, Vol. No. 9 and No. 10, of the Stellite Reference Library, devoted to Stellite welded-tip tools and Stellite bar stock, this product being a metal for high-speed cutting tools.