

Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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Government Reorganization Plans Show Signs of Life

PRESIDENT HARDING and his committee on the reorganization of the executive branch of the government appear to be making progress in formulating concrete plans and recommendations to present to Congress. Latest reports indicate that the President's principal recommendation is that bureaus and agencies be grouped according to their major purpose and that the purpose of each department be clearly defined. The committee says that it is already working along this line and reports of its own plans indicate that it has gone straight to the point and suggested a concrete grouping which is logical and which really is according to the President's definition.

All this is good. But it is a long way from such a proposal to an enacted law. The public must express itself, meanwhile, if results are to be obtained. As previously pointed out in these columns, pressure from his constituents is the most determining influence on a Congressman's vote.

This subject should be watched and pressure exerted when and where it will do good. The electric railway industry should benefit as much as any from the effects of an enlightened public consciousness of better economy and efficiency in governmental business. More important, this is the sort of thing that should be done and it deserves active support from individuals who should write to their Congressmen urging *action*.

The Bus, Like the Early Railway, Develops New Territory

TERRITORIAL expansion of communities can be accomplished only by some means of universal transportation. In the early '90s this was the field to which the promoters and developers of the modern, present-day electric railways directed their energies with so much success—not, perhaps, in the way of profit to themselves, but certainly in advancing the welfare of the community. They could not foresee the increased costs that have been placed upon these railways in the past half decade, either rendering them barely self-supporting or actually putting them on the scrap pile.

The large investment needed today to build railways precludes much if any extension until these construction costs can be reduced. But that transportation where it is needed will be furnished somehow, by individual operators or otherwise, is obvious when the many bus routes in the country are studied.

In this issue mention is made of a real estate development in Akron, the success of which depended solely upon having means of transportation. In order that the home owners in that territory might be able to get back and forth to their work and pleasure with some degree of ease and without walking a half mile or more to the nearest trolley car line, it was but natural for the promoters of the new addition to solve the problem themselves.

Thus it will go—when the need for transportation arises. The same form of development will occur in the '20s as did in the '90s. Transportation promoters will not, however, in this day and time put in the most expensive installation, but will carefully analyze the cost of doing business and will install that form of system which will give the greatest service at the minimum of expense. It may, at first, be a light-weight bus on a leisurely schedule; later on, a more elaborate bus proposition or a trackless trolley car, and then, when traffic becomes permanent and stable enough to warrant a larger investment, the trackway will provide the route.

Stand Up for Your Legal Rights, but First Educate the Public

THIS was the advice given to the managers of the New York State electric railway properties at their recent annual meeting by Judge John A. Barhite, formerly Public Service Commissioner of the State. According to the speaker the utility companies are apt to forget that their chief obligation to the public is to supply good service. There is a power, he said, which can change a franchise when constitutional rights are involved. This power, of course, may be exercised to protect either party to the contract.

This advice of Judge Barhite should not be overlooked. Railway men are too accustomed to think of a franchise rate as unchangeable, no matter what the conditions are under which it was granted or the time which it was supposed to run. In this impression, of course, they are like the public. There are a great many citizens who consider a franchise rate, at least when it is low, as sacrosanct. In no circumstances, according to them, can it be changed without the consent of the people served or their local representatives, no matter how long ago the rate was made or how conditions have changed since it was established.

In the address at the Lake George meeting to which reference has been made the speaker very wisely pointed out the duty of the utility operators, where cases of unremunerative rates exist, to explain to the public the rights of the utility in cases of this kind. A process of education of the public in cases of this kind is highly desirable. This explanation of the facts of the case should not be left until a crisis arises, as the process is one requiring time. This time should be shorter, however, than formerly, because of the many instances of rate increases during the past three or four years throughout the country, so that the public is better informed now of the legal status of rates.

While the legal situation was clearly defined at the Lake George meeting, railway companies should also realize that while, in certain circumstances, courts and commissions can raise rates, their power in one respect is very definitely and absolutely limited. They cannot compel the people to take the service at the charge permitted. For example, in transportation, when the rates are considered too high, the public or a portion of it

has the option of walking and perhaps of riding in jitneys and private automobiles. In other words, on many properties the legal limits are not the only ones which control a fare. Commercial considerations must also be taken into account. This affords still another reason for the educational program of publicity urged by Judge Barhite.

Eyes Are Again on Richmond; This Time the Trackless Electric Car

IT IS a marked coincidence that the trackless trolley exhibited at Schenectady on June 15 should be destined for Richmond, Va., where the first commercial electric line in this country was put into service. The trackless trolley is not new, as it has been operated to a considerable extent in foreign countries, but the rapid development of the automobile on the one hand and of the safety car on the other has made it possible to design a modern machine of this type that has great possibilities. In the trackless trolley vehicle that was exhibited at Schenectady is found a bus that is a combination of the good things of both the automobile and the electric railway car. By adopting the automobile chassis it is possible to eliminate expensive track construction and paving with its steel rails and fixed way, along with the weight and objectionable noise of metal wheels and grinding brake shoes. By adopting the pay-as-you-enter safety car body there is retained its desirable features in handling passengers and collecting fares. By adopting the electric motor as the drive no new maintenance problems of gasoline motors, with their clutches and transmissions, are introduced. And this is not all; the Schenectady trolley bus will, it is said, operate at a cost at least as low per car-mile as any automobile bus or electric car yet developed, and it is, therefore, economically sound.

Now what is the field for this new trackless trolley? There is of course no ground to assume that it is going to replace the electric car or the gasoline bus under all conditions, but its practicability for new extensions and feeders to electric lines is at once apparent to all. Then there are those thousands of communities in this country that have grown faster than the electric railway facilities. There are also those communities whose growth has not been in the directions anticipated. It is not unusual to find examples in which a car track may be on one side of a town, which was the proper place for it when first constructed, but now all the development has taken place on the other side. Simply by the erection of a pole line and trolley, the trackless trolley may be run through the newly populated section and then over the route where there are already tracks and the original trolley line; in fact, the trackless trolley car may be sandwiched right in with the regular cars. Again, there is the single-track line that should have more service, but on which it is impossible to put any more electric cars on account of the lack of the necessary turnouts. Maybe the expense is too great to make it pay to install the other track with paving costs added, or it is not possible to get the extra track at all on account of the necessary franchises. But, with the trackless trolley, all that is necessary is to install an additional wire and operate additional service.

No doubt there will be improvements made on the trackless trolley as shown at Schenectady on June 15. But the fundamental idea is sound and the trackless trolley bus will undoubtedly be a factor in the transportation of the future.

Patrons Converted Into Defenders of Road

CONTROVERSIES often rage over trifles. Every commuter knows this. It is borne in upon him from all sides. It is his pride in his home town, his pride in his garden, his pride in his isolation, that makes the commuter quick to resent any implication that he and his are not the best. All this is highly desirable, more so when this tendency jealously to guard the things he considers peculiarly his own manifests itself in the defense by the commuter of the railroad that carries him back and forth daily.

This is just what has happened in New York. The Transit Commission there has been giving out figures of passenger movement, claiming for the Flatbush Avenue Station of the Long Island Railroad the heaviest suburban traffic. Last year 33,966,092 passengers passed through that one portal to the metropolis. This is certainly a formidable army of the suburban species, but it does not constitute a record. At least Lewis Saxby says so. And in substantiation this commuter-stockholder-statistician contends that even the combined traffic of the Grand Central Station and the Pennsylvania Station is about 22,000,000 passengers fewer per year than the traffic of the Hudson tubes.

Few places there are that have figures to offer to compete with these imposing and, to some of us, staggering totals, but then, as Dr. Einstein says, it is all a matter of relativity. The relativity may not be readily discernible. It seldom is. If it were, a professor wouldn't be needed to point it out, and the need would not exist for applying to it a term that probably Mr. Edison had to look up for its meaning when the savants dragged it forth into an unsuspecting world. But the relativity is there.

The Hudson & Manhattan Railroad, "Hudson Tubes," has been a personally conducted line ever since the days of William G. McAadoo. This has borne fruit. The case of Mr. Saxby is not an isolated one. It is merely another manifestation of the spirit that makes the rider on this line consider the property to be peculiarly his own.

If Mr. Saxby hadn't thrown down the challenge some one else would have taken up the cudgels in behalf of the railroad. Of this there is no doubt. And how much better it was for the company to have one of its patrons spring to its defense than for the company itself to sing its own praises! Readers of the ELECTRIC RAILWAY JOURNAL may not have any immediate concern with the totals of passengers involved in this controversy, but they do have an interest in the spirit of service behind the Hudson & Manhattan Railroad operation which converts patrons of that line into quick defenders of the road and all that it stands for in management and operation. Therein lies the lesson that may be well learned by others.

Careful Perusal of the Index May Save Waste of Effort

THE index appears in this issue. The publishers of this paper have always paid special attention to the compilation of the semi-annual index, and to insure the receipt of it by every subscriber a copy for each semi-annual volume is bound in with the last number of that volume. In consequence, the index for Volume 57 appears in this issue.

A few words as to the method of compiling the index

may not be out of place. It is essentially one of subjects and not of titles. For this reason an article which discusses a number of subjects may have an equal number of entries in the index. Articles relating to individual companies are indexed under the names of those companies and a list of the principal key words which have been used is given in the instructions for the use of the index.

There are many ways in which the occasional reading of back copies of a periodical like the *ELECTRIC RAILWAY JOURNAL* will help the active worker in the industry and in such reading the index is a great help. One way, for example, especially with an industry which, like that of electric railways, has grown rapidly, is to disclose ways in which different problems have been approached. An engineer or transportation official to whom a problem is presented for solution may think that he is the first to whom this question has been presented, when actually it may have had to be considered in approximately the same form on other properties. This, if recorded in this paper, would be disclosed by the index, and the searcher for the answer to his question would find it had been considered in earlier years. Even if the problem were not the same in all respects, a new aspect and help may be gained by a study of the ways in which previous investigators have attempted to do the same work.

Another advantage of the occasional perusal of back volumes and indices is the perspective of the industry gained thereby. By the space given to different topics in both the bound volume and the index, one may be able without difficulty to appraise the importance which these topics seemed to have at the time. Often those that became relatively unimportant for a time appear again in the front rank, an example of the adage "history repeats itself." Patent attorneys declare that there would often be a saving in time and money spent in research to rediscover old inventions and resurrect old ideas if investigators first made a study of the prior knowledge of the art. This is undoubtedly equally true in the case of subjects and methods which have been found to be not patentable.

Still a third benefit of the practice of using the index and back volumes is to refresh the memory and to acquire information about events and methods the articles concerning which were not read at the time they were published. Whether this was because of a lack of time or opportunity, the result is the same. The quickest way for a person who has been out of the country or otherwise separated from the industry quickly to get an understanding of what has passed is to review the back copies and indexes of periodicals. In fact, any reader who binds his copies of the paper regularly and gets the habit of frequently consulting these bound volumes for specific topics by means of the index or looking over them, even if not in search of some definite data, will find that the numbers possess much of interest and value of which he had hitherto no conception.

Essentially the Interests of the Public and Electric Railway Are Identical

LAST week the Pennsylvania Street Railway Association held its annual meeting at Harrisburg; the gathering was large and the spirit of the discussion was good. However, there was nothing remarkable in the size and spirit of the gathering, as the same might be said, and is said, regarding many other meetings; the remarkable thing was the program. Included in the list of speakers were the president of the American Electric Railway Association (who spoke twice), the chairman and the chief engineer of the State Public Service Commission, the State Librarian, and the field secretary of the State Chamber of Commerce, not to mention some well known electric railway men.

Forgetting for the time being the excellent technical papers which were read and discussed, the industry can gain much from a study of the addresses of these speakers from outside of the association. Abstracts of their addresses as well as of the other proceedings of the meeting will be given in an early issue of this paper. The impressive thing about the whole discussion on public relations was the way in which the fundamental unity of interest of utility and patron is coming to be understood. To illustrate: Chairman W. D. B. Ainey of the State Commission showed in his address that the welfare of the electric railways is a matter of real concern to this regulative body, which is handicapped in its constructive task in part by the contracts which the railways themselves entered into in the early and supposedly palmy days, and by the lack of provision for financial jurisdiction as regards the issuance of securities. Dr. F. H. Snow, head of the engineering department of the commission, also showed a sympathetic interest in the welfare of the utilities, pointing out how intimately the local and national problems in this field are related. President P. H. Gadsden of the American Association, speaking from the railway point of view, demonstrated that in permitting economic conditions to exist which make it impossible for the railways to extend and otherwise improve service the public is hampering its own development. He saw difficulties ahead in the direction of getting new money, but was optimistic with respect to the future, if the public will allow a reasonably liberal and prompt payment of the deferred returns to the holders of securities. Finally, D. M. Casey of the State Chamber of Commerce pleaded the cause of the electric railway as if he had been a railway man himself. His theme was really the essentiality of electric railway transportation, and he presumably reflected the attitude of the modern business man toward this vital public service.

All this is very encouraging, especially if it gets to the ear and eye of the public. The electric railway man may well pass on to his patrons the good things said of the utilities by their own representatives, as well as the inside facts of the business which only the electric railway men themselves know at first hand.

Quotation from the Federal Electric Railways Commission Report

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WITH capital and labor performing their respective parts freely and well, restrictive regulation would be unpopular, and the demand for the substitution of public ownership and operation for private management would shrink into relative insignificance. The test of private ownership and management lies in the solution of these two problems of credit and co-operation. These problems must be solved, and if no solution is practicable under present ownership and control, then the only course open is the complete transformation of the electric railway industry into a governmental business. Each member of this commission believes that credit can be secured and private operation maintained under public supervision.

Pioneer Trackless Trolley Installation

The Experimental Richmond Trolley Bus Operates in Conjunction with Rail Service to Demonstrate Its Worth and Flexibility and to Compare Costs of Operation Under Like Circumstances—Details as to the Construction of the Bus Compare Favorably with the Modern One-Man Car—A Special Type of Overhead Construction Needed for Its Operation

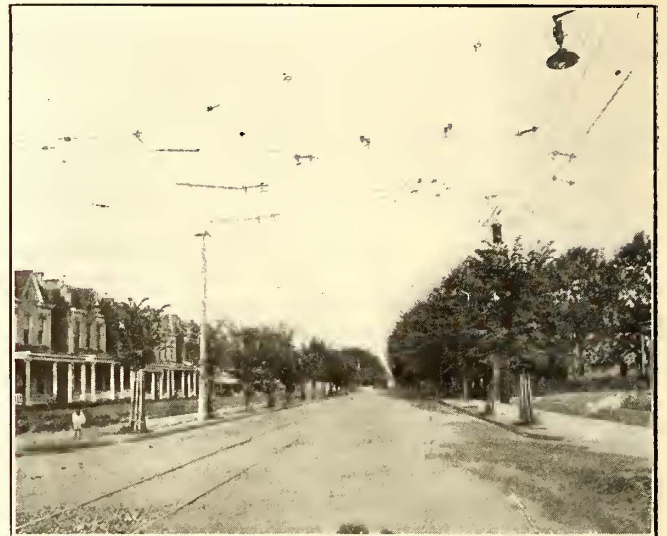
THE trackless trolley bus tested in Schenectady on June 15, as described in the issue of this paper for June 18, has been put in operation in Richmond, Va., by the Virginia Railway & Power Company. In May, 1888, thirty-three years ago, that city saw its first electric car. Now in 1921 the transportation world looks to the same city for information regarding the operation of the trackless trolley.

While this is not the first installation in this country of a rail-less vehicle propelled by electric motors taking power from two overhead wires, it is nevertheless the pioneer installation where a trackless vehicle has been used. The "Trollibus," so called by its builders, the Atlas Truck Company, has a body somewhat similar to that of the standard safety car mounted on an automobile chassis of special design.

The vehicle, according to C. B. Buchanan, general manager of the railway company, who is largely responsible for its design, can very readily be converted to operate over a grounded track return circuit such as is found in almost universal use throughout the country today. To accomplish this it is only necessary to replace the solid rubber tires with steel flanged rims to fit the track gage and substitute for the sliding contact shoes on the trolley a wheel or shoe to take current from the overhead trolley wire.

The machine as built, however, will operate on a track return circuit, even though equipped with rubber tires, by having an adapter, so called, attached to the collector for connection with the standard overhead trolley wire and engage a shoe which fits into the trolley track groove to give the necessary ground connection.

The route in Richmond over which the "Trollibus" operates is purely for determining its possibilities and extends along Floyd Avenue, a street over which the Country Club car line also operates. A negative wire has been installed on this route for a distance of one mile, so that the bus really supplements rail service on that part of the route. Among the reasons for supplementing the car service was to demonstrate the ease with which the rail-less vehicle could maneuver in traffic, as well as to compare its cost of operation and

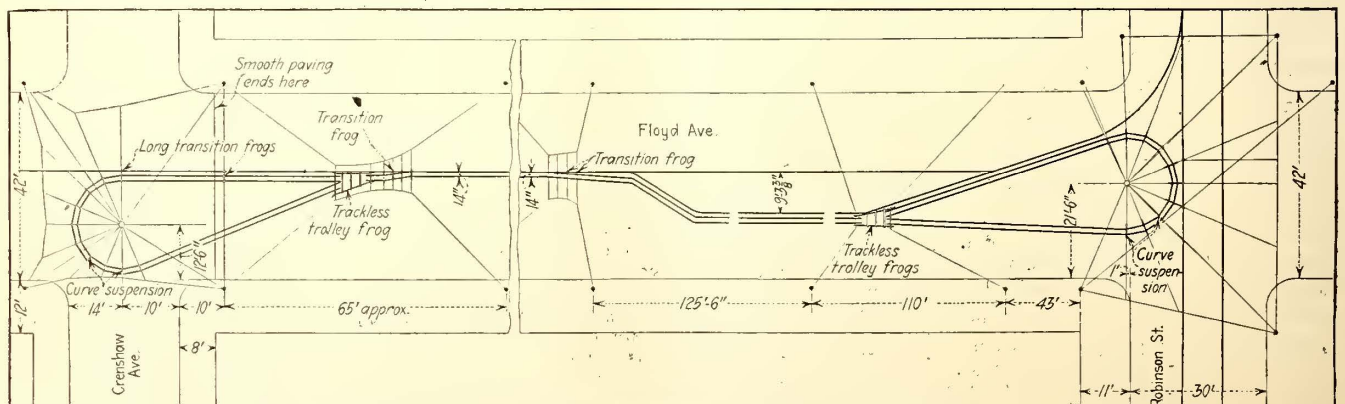


UPPER END OF BUS ROUTE ON FLOYD AVENUE, RICHMOND, WHERE BUS TURNS BACK

popularity with other transportation units. Cost analyses as to operating expenses are being made from all operating data and a careful check is being kept of the passenger traffic in order to obtain an index as to its popularity. Operation over this route also gives the city officials an opportunity of deciding for themselves whether or not other permanent routes should be approved for operation solely with this type of vehicle.

The "Trollibus," which resembles very closely the one-man prepayment car in that each has the same seating capacity, combines several of the good features of light-weight body construction, electric motor drive, mechanical door control and prepayment fare collection with the flexibility of the automobile chassis and to some extent the mobility of self-propelled vehicles, to furnish ammunition with which a railway company can combat free lance competition with a minimum of investment and cost of operation.

Since there are no rails to complete the electric cir-



LAYOUT OF ROUTE ON WHICH TROLLIBUS OPERATES

cuit, two overhead wires are used to form an all-metallic circuit. The wires are strung parallel, 14 in. apart, and doubly insulated with porcelain ring insulators. The two wires are held in position by a spreader. The proper installation of the necessary overhead calls for a new complete line of fittings with the exception of the trolley ears and studs. Several accompanying views, some of which were taken while the bus was on the experimental track in Schenectady, show the hangers used on tangent stretches as well as the pull-offs necessary on curve construction.

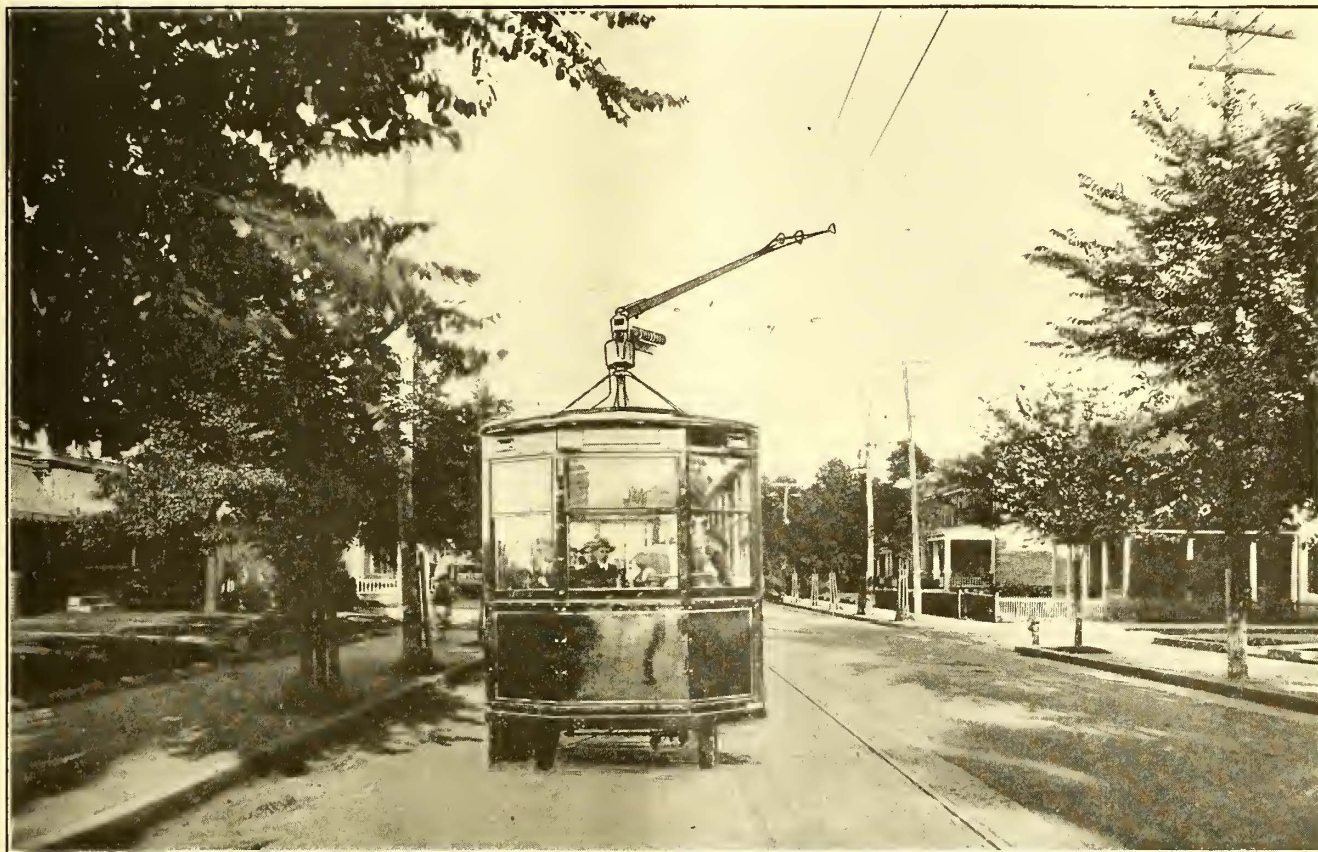
GENERAL DESCRIPTION OF THE CHASSIS AND BODY

The chassis, which has an over-all length of 22 ft. 9 in., can be rated as of 5 tons capacity. The frame is constructed of steel channels, which weigh approximately 13 lb. per ft. and are reinforced with gussets at the corners and at all intersections with cross members.

rear springs are 56 in. in length and have sixteen leaves.

The front axle is an I-beam section and carries 50 per cent of the weight of the bus. The rear end is a standard 5-ton Sheldon worm-gear drive which is connected directly by universal joints to the propeller shaft.

Cushion wheels of the Mead type, built by the American Cushion Wheel Company, are used exclusively. On these wheels are mounted 36 in. x 6 in. Kelly-Springfield solid rubber tires of the caterpillar type. Much has yet to be learned as to the type of tire best suited for trackless trolley operation, and by no means can it be said that any one type is to be used until experiments of sufficient duration have been made in actual service to prove durability and minimum cost per mile. The track tread of the tires as mounted on the wheels is 58 in. measured center to center. This is 2 in. wider than the standard track gage.



THE EXPERIMENTAL ROUTE IS ALONG FLOYD AVENUE THROUGH THE RESIDENTIAL DISTRICT—THE BUS, WITH ITS LOCAL ENVIRONMENTS, WILL SOON BE A FAMILIAR PICTURE

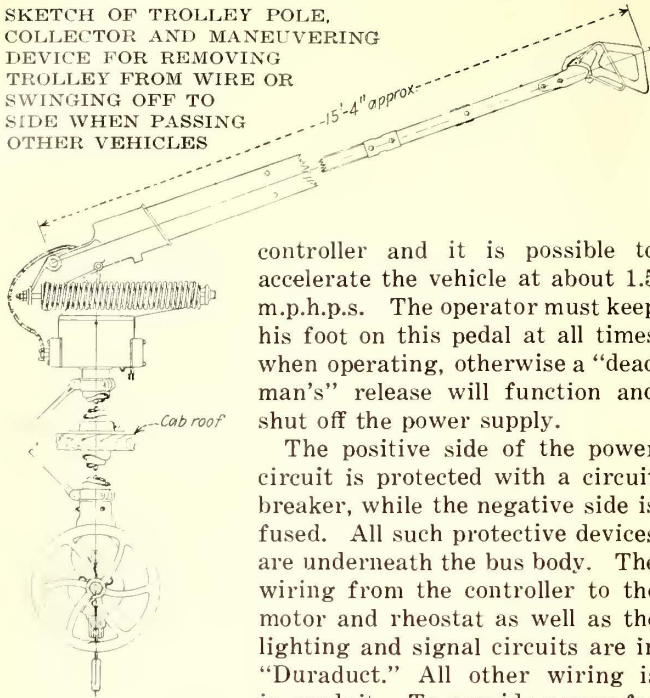
The distance between the side members is 34 in., which provides ample room for hanging the motor in between. To the frame is also directly attached the body, which is constructed of steel uprights on 26½-in. centers and rolled steel car lines that give an arched roof effect very much similar to that of a limousine body. The body is paneled below the window sills with ¼ in. Steelsote and the roof material is Three Star Agasote.

With the body so mounted a semi-flexibility is obtained that is not found in general street car practice, where bodies are built rigidly with side sills and mounted on rigid trucks. The semi-rigid body and frame are supported on half-elliptical springs mounted directly on top of the axles, using the standard Atlas truck method of suspension. The front springs are 50 in. long and 3 in. wide with twelve leaves, while the

Power for propulsion is furnished by a standard GE-258 ball-bearing ventilated railway motor, a type that has been largely used for driving safety cars. This motor is so supported between the side frames that it can be direct connected to the propeller shaft by a universal, in about the same manner as an automobile gear drive shaft is connected.

The operator or driver operates the controller by means of a foot-operated RZ type of controller, a detail view of which is presented. By pressing down on the pedal lever, which is mounted in all respects similar to the automobile clutch foot pedal, the driver can actuate the controller point by point by alternately pressing on and releasing pressure on the foot pedal. As the pressure is released, the pedal moves upward and a "dog" catches in the next notch. There are five points on the

SKETCH OF TROLLEY POLE, COLLECTOR AND MANEUVERING DEVICE FOR REMOVING TROLLEY FROM WIRE OR SWINGING OFF TO SIDE WHEN PASSING OTHER VEHICLES



controller and it is possible to accelerate the vehicle at about 1.5 m.p.h.p.s. The operator must keep his foot on this pedal at all times when operating, otherwise a "dead man's" release will function and shut off the power supply.

The positive side of the power circuit is protected with a circuit breaker, while the negative side is fused. All such protective devices are underneath the bus body. The wiring from the controller to the motor and rheostat as well as the lighting and signal circuits are in "Duraduct." All other wiring is in conduit. To provide power for

the emergency lighting of the bus body, the headlights and tail-light a 120-amp.-hr. storage battery is carried. This is charged as the bus operates by a 12-volt generator direct connected to the motor shaft.

CURRENT-COLLECTING DEVICE

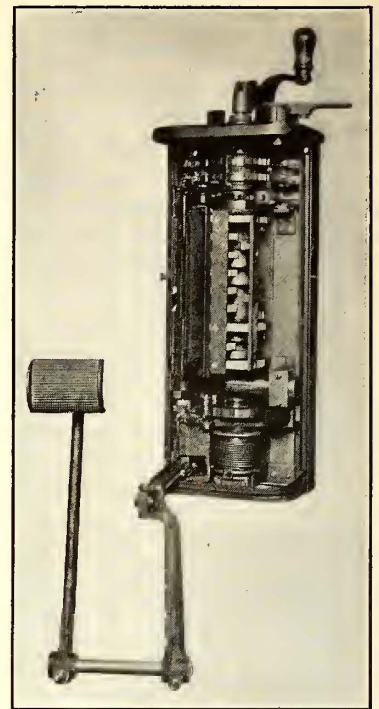
Power is taken ordinarily from the two overhead wires by a specially designed collector, details of which are shown in one of the accompanying illustrations. This collector, which weighs but 16 lb. exclusive of the base, has two sliding shoes with approximately 12 in. free space for each wire and makes the over-all width of the collector shoe 28 in.

By the use of this form of collector, which has a

spring tension of 25 lb., it is possible for the driver to get off center about 9 ft. before the collector will pull off the wires and leave the bus "dead."

The operator can maneuver this collecting mechanism from inside the trolley bus. A vertical wheel which actuates a lever operates against the tension spring and makes it possible when one bus vehicle passes another, utilizing the same trolley wires, to clear the line and allow the one met to proceed. Afterward the current collector can be replaced on the wire and the bus proceed on its run.

When necessary or desirable, as on returning to the car-house at night or for repairs, the bus can be made to operate on a standard 600-volt trolley circuit. A short-circuiting sliding contact trolley shoe is inserted in the collector, which provides the positive side of the circuit. To get a ground or complete the circuit a metal shoe is fastened to the body frame and dragged along the top of the grounded track rail. By this means it has been found possible to operate the bus at a speed of 8 or 9 m.p.h.



INTERIOR VIEW OF CONTROLLER, SHOWING HOW FOOT PEDAL FUNCTIONS WITH RATCHET AT BOTTOM OF CYLINDER SHAFT



AT LEFT, NO DIFFICULTY IS EXPERIENCED IN PASSING VEHICLES ON THE ROADWAY; AT RIGHT, TROLLIBUS TAKING 90-DEG. CURVE. NOTE THE SYSTEM OF OVERHEAD TROLLEY CONSTRUCTION

The interior finish of the bus, as well as the entrance and location of the apparatus for operation and fare collection, is shown in one of the accompanying illustrations. The seating capacity is thirty and with fifteen standees the maximum safe loading is considered forty-five. On the basis of the seating capacity this allows $5\frac{1}{3}$ sq.ft. per seat. At 150 lb. each for the passengers and also including the driver, the live load is 6,900 lb. The over-all length of the vehicle is 24 ft. 8 in., which corresponds to a linear length of 0.822 ft. per passenger seat, as compared to 0.935 ft. with the Birney standard 28-ft. safety car. There are three cross seats and one short longitudinal seat for three passengers on each side of the bus. In the rear is a semi-circular seat large enough to accommodate twelve passengers. The seats are bolted to the body floor and are upholstered in leather and are spaced on centers of 28 in. with an 18-in. aisle. Ventilation is provided by running an air duct on each side above the top of the window sash next to the roof the entire length of the car with an air intake at the front. This duct is perforated with small holes around each of the lamp sockets used to light the body to form an ornamental design. No card advertising racks are carried.

There are two illuminating systems, one on the trolley circuit and the other on the storage battery circuit. The trolley circuits consist of two five-light, 23-watt frosted globes mounted directly over the tops of the windows. The other is an emergency circuit and utilizes current from the 8-volt storage battery. Only three lamps are on the latter circuit, one over the entrance, one over operator's head, the third over rear door.

The entrance and exit are at the front on the right, with doors manually controlled by the operator. The two-leaf folding doors can be opened inwardly so as to give a clear opening of 34 in. At the rear of the bus body is an emergency door.

The steps are entirely within the body, so that with the doors closed there is no opportunity for any one to ride on the outside of the vehicle. The height of the first step from the ground will be from 13 to 15 in., depending on the street level and the number of passengers on the bus. There are two 9-in. risers and a $2\frac{1}{2}$ -in. ramp to the level floor, which is about 35 in. from the ground with the bus loaded.

The curtain fixtures are those of the National Lock Washer Company, while the curtain material is panta-sote. A Faraday buzzer signal system to the operator is provided for the convenience of the passengers. Two Golden Glow headlights with 21-c.p. lamps are mounted on the front dash and operate from the storage battery.

The side windows can be pushed up $16\frac{1}{2}$ in. so that a passenger has a clear vision. Other accessories include roller destination signs, mirror for operator to maneuver the trolley, Johnson farebox, light switches, etc.

The interior of the car is painted with white enamel above the tops of the windows. The outside is olive green with a gold stripe.

The second Simplon tunnel in Switzerland is reported to be nearing completion. Less than a half mile is still to be completed and about one and a quarter miles of rails to be laid. The electric cable transmission line on the north side has been completed and that on the south side is under construction. It is expected that the tunnel will be ready for traffic in December of this year, by which time the Italian section will also be ready for service.

York's Trolley Bus Service

TROLLEY bus service, according to the *Tramway & Railway World*, was recently established in York, England, over a 1.25-mile route with four vehicles comprising the equipment.

Some of the points that led up to the installation of these buses was that the experience of various authorities with gasoline motor omnibuses upset the optimistic expectations of those who overlooked the disadvantages of the internal combustion engine. It was found that repairs were numerous and costly, that frequent overhauls reduced the annual mileage, so that the useful life of a motor bus was somewhere near five years. Then, finally, just when revenue was being swallowed up by expenses, the price of gasoline increased until the cost of fuel alone reached the abnormal figure of 8 pence (16 cents at normal exchange) per car-mile, and many services that had been launched with the hope of profits were actually operated at a loss.

There are no severe grades on this route in York, but the service is conducted over some of the very narrowest streets in the city, having numerous sharp bends and turns. As a result, the vehicles have the narrow over-all width of 6 ft. 3 in.

As the buses cater to very light traffic, they have been designed on the "one-man" principle, using fare boxes. The driver's vestibule is inclosed and has an entry on the off-side. The cars are of the single-deck type and have a seating capacity of twenty-four.

Motive equipment consists of two 23-B.h.p. motors arranged for series-parallel control and two cam-control trolleys. Cars can deviate 17 ft. off center without risk of dewiring.

Another Advantage of Electrification Emphasized

THAT smoke was not only a nuisance but was an actual source of danger was brought out in a paper on the safety hazards of the New York Central Terminal equipment by H. M. Balliet, assistant terminal manager, Grand Central Station, read before the American Society of Safety Engineers on May 27. He showed by means of pictures how dense the smoke in the old Park Avenue tunnel used to be, with the large number of steam locomotives in operation for both through trains and for switching. On certain days, when the air was still and heavy, the tunnel, filled with smoke that refused to dissipate, would be made nearly impassable. At these times the tedious and dangerous practice had to be resorted to of passing an incoming or outgoing train along from flagman to flagman, usually twenty or thirty being required to furnish any degree of safety. The hazard involved in this sort of train operation was great, especially for the yard men and those engaged in the signaling. Train operators who have worked under the new conditions, Mr. Balliet said, realize how many of the former ubiquitous hazards have been corrected by electrification.

In remarking on the hazards of various parts of the electrical installation, Mr. Balliet mentioned how successful from the safety standpoint the type of third-rail construction employed had been. The New York Central third rail is of the under-running type and the cross-section is symmetrical with respect to both horizontal and vertical axes. Because of the wooden sheathing, it is very seldom indeed that any one comes into contact with the rail.

Merchandising Transportation

This Is the Second of a Series by the Author on This Subject—The Topic Particularly Considered in This Issue Is the Education of Trainmen Along Salesmanship Lines and the Illustrations Are from Advertisements Published by the Company or from Bulletins or Letters Sent to Its Men

By W. H. BOYCE

General Manager Beaver Valley Traction Company, New Brighton Pa.

SOME writer, in defining salesmanship, says: "It is simply making the other fellow feel as you do about what you have to sell." So your job, Mr. Manager, is cut out for you. You must sell the idea of salesmanship to your employees so that they may sell the actual service to your public.

Some trainmen on entering the service do not seem to have been taught the rudiments of courtesy, so you must first teach them to show the proper respect to your passengers, the source of your and their income.

If your employees are courteous and polite, the impression is good. If too short with answers, or other than attentive, the opposite is true. You cannot afford to keep in the service men who would cause the opposite to be true. Indifference to the public on the part of your employees is a very serious blight on your business.

Every employee should be encouraged to acquire a personal reputation for good manners as well as good deportment. They are your personal representatives.

Any conductor who is oversensitive will never be a good salesman. He must be able to take a rebuff without taking offense or without losing his temper.

Interested, careful, safety first, attentive, cleanly, obliging and courteous trainmen will make for more car riders and thus assist you in selling more car rides.

Street railway employees come in closer contact with the public than the employees of other utility companies. Any person accepting employment must obligate himself to do all in his power to prevent disputes. He must be required to be courteous under irritating circumstances and polite under criticism of persons unfit mentally to criticize the service either intelligently or constructively.

On the Beaver Valley Traction lines we have kept before us the idea that the first principle that should contribute to the success of the sales organization is honesty—honesty in dealing with the members of the organization and instilling in them a sense of duty and honesty both to employer and the public.

We have spent considerable time and effort in teaching our employees what we consider proper transportation selling methods and to this end have issued an employees' service code, supplemented by frequent personal interviews and personal letters, and circular or individual letters mailed to employees' homes.

Salesmanship is something more than a science and an art. It is a principle—a principle of human relationship. It is the principle of the influence of one person or persons on another person or persons. To sell we must make the other fellow feel as we do about what we have to sell.

"WE NEED YOUR HELP"

If you do not like your job here—*tell us why.*

If you know anything that will improve our service—*tell it to us.*

If you know nothing but scandal about your fellow employees—*keep it to yourself.*

If you know of violations of rules that endanger our passengers or service—*tell it to us.*

If money matters have become a worry to you—*tell it to us.*

If you have money to invest and are offered stock the value of which may be in doubt—*tell it to us.*

If you need legal advice, banking advice, family budget advice, property purchase advice—*tell it to us.*

If there is sickness in your family—*tell it to us.*

It's a Pull Together Idea, Boys We'll Go the Limit for You

If well, sick, worried or in debt, or you have an idea that will help your company—or anything we can do, get or learn for you the door is wide open—walk in and TELL US.

That'll Help You and Your Company

The Beaver Valley Traction Company,
Pittsburgh & Beaver Street Railway Co.

W. H. BOYCE, General Manager.
H. O. ALLISON, Safety Engineer.

October 13, 1919.

Mr. P. F. Householder, Vanport, Pa.

My dear Householder:

It's costing us about \$6.25 to talk to you in this manner. I am doing it, though, expecting that the ultimate result will justify the expenditure. I am sending it to your home, where you will have the leisure to give it the consideration it deserves.

It is a present day issue that the careless and incompetent men cannot long retain a position with a worth-while concern and I want every man on these lines to be a careful Safety First man.

Now, this is an all-together movement. I will do my best to help you understand and act in the manner to prevent accidents and accident chances. I will bear with, advise with, and support you in learning, and hope for efficiency on your part as a reward. I will just as earnestly make an effort to weed out the hopelessly incompetent, for they are a detriment to all of us employees and to the company. I want you to note inclosures herein. I want you to understand these letters and my motive as both are to your interest, and in understanding and acting reap the benefit.

No, "Allison does not report you." He is permitted to tell you the better way. Your record speaks for itself, and bear in mind that when "Allison says this or that," as you may hear from some who have been cautioned, it is a very good idea for you to adopt his suggestion. It may save you an accident. If you can make a suggestion to me that will prevent an accident you can bet your best lantern and last week's pay that it will be adopted. Watch for these letters, discuss them with the wife, if you have one. Discuss them among your fellow employees, or me if you desire, but let them soak in and get under your hide for they mean what they say.

Very truly yours, SAFETY ENGINEER.

Approved: Superintendent.

Our ideas of how to sell the service idea to employees is best illustrated by the accompanying examples of talks to the men and the public.

The things kept in mind have been:

1. To make our employees realize the different kinds of competition that we face.
2. To have them make the passengers' ride as pleasant as possible.
3. To have each employee acquire a reputation for good manners.
4. To aid the employee to enjoy his work.
5. To teach each employee to control his temper.
6. To help him to obliterate his self-consciousness and devote all his energies to his duties.
7. To obtain his co-operation.
8. To help him constantly to improve himself.
9. To have him be civil, kindly and thoughtful in his actions, considerate of the welfare and wishes of others; in other words, to be courteous.

In order to live you must sell car rides. Your auditing or stores department may be weeks behind. Your purchasing department may secure inferior materials. Your finances may have been mishandled. And yet for a time you would be able to run cars and sell rides. But to shut off all car riders, all revenue, how long will you be able to operate?

Think it over.

Be a motor car, not a trailer.

Typical Advertisements in Daily Papers

Many Thanks

WE have received letters praising trainmen for courtesy and consideration of passengers' comfort, convenience and welfare. Many cases of kindness to children and elderly people have been mentioned.

Such letters help the public, the employees and the company.

We invite the public to write us about any feature of the work of our trainmen or of our service which they consider worthy of mention. We will see that every such letter is placed before the employee to whom the credit is due and that it is entered upon his record in the company's offices.

We invite you also to report any lack of courtesy or inefficiency. We investigate every complaint promptly and carefully, and take such action as the facts warrant.

Beaver Valley Traction Co.

All Cars Have Controllers.

All tempers should have. If either are missing from our cars or employees won't you give us the benefit of your knowledge? We in turn promise to improve the condition.

Beaver Valley Traction Co.

Your Point of View

OUR car riders here can be assured that this organization will consider each ride sold as much from the rider's viewpoint as from our own.

The cordial relations existing between this company and its thousands of patrons have been strengthened by always trying to put ourselves in the car rider's place.

Do not hesitate to write or phone us upon service matters. We are in your employ.

Beaver Valley Traction Company

Street Car Conductors—Service and You:—

HUMAN, real, a living, breathing representation of the handiwork of God—that is the Street Car Conductor. He has his temperament, emotions, temptations, likes and dislikes, affections, loved ones, hopes, aspirations, trials and tribulations just the same as you and I.

We take the best of those applying for this position and through teaching and constant supervision strive to make of them such men as will truly represent these companies before you—the public, our patrons.

Just as all humanity is liable to err, misjudge, fail or weaken, this man of service on the cars is not immune. He cannot be and be human. We pride ourselves though that the street car conductor errs less often under a ten times greater strain than those in other similar callings.

Be in mind the street car conductor daily has a constantly changing patronage. It becomes a finished salesman's task to meet the moods, supply the information, sell the ride, make the collection and satisfactorily close the transaction by delivering each patron safely to destination on time and without undue inconvenience.

We spend much time training the men serving you on the lines. To always keep employed and to employ those who are or will become most proficient is a task. That perfect type of supervision does not, nor will it ever, exist in this or any other calling.

We ask you to expect a better service, more thoughtful attention on these lines than you will obtain in any other community, but, please, when one employee fails to meet your standard or expectation of service, do not condemn us all. Recognize the frailties of man and be governed accordingly.

Beaver Valley Traction Co.
Pittsburgh & Beaver Street Railway Co.

Extracts from Employees' Service Code

INCREASING BUSINESS

Increasing business on the street cars may sound funny to you but it can be done.

Every time you run past an intended passenger you create a feeling that results in his walking.

Every time you are late people walk.

Every time you miss being at the depot stop when the train comes in people walk.

Every fare counts against you, as the fares pay your wages, and I get mine from the same source.

PASSENGER PAYS YOU

The greatest service existing in your work is the service the passenger gives you. Funny, isn't it? True enough. I said he paid your wages. That's mighty important to you—mine are to me anyway. So, every service you can give the passenger will not be any more than he is entitled to—remember that.

But few of the passengers consider you except in the way you serve them in their transportation needs. Do your duty by every one and when the day comes to a close you can in content spend the evening with the folks at home. Violate the rules and circulate your grouch and things won't be pleasant here nor at home.

SOME WALK—SOME RIDE

There is no "have to" about it any more. Those who can, walk when you are not there. Many others buy Fords or automobiles, and if luck is with them "get there" without using the street cars at all.

So you see that we have competition.

Good business demands that we meet that competition with something better. There's where your job begins.

HOW YOU MEASURE UP

Let me tell you that the passengers are more valuable to us than you are. We cannot get along without the passengers.

So, put in the background or shelve any idea you may have or had that you are the king pin. You are not—neither am I—the passenger is the important party.

Don't forget it.

THE PASSENGER

What if some of them are cranky and want to "bawl you out" for a mistake of yours that you did not intend to make but did it and it brought forth the passenger's rebuke? Wait until he is through and then in a quiet and gentle tone of voice say "I am sorry, sir, I did not intentionally make the mistake." That is all you need to say. Say it like a gentleman or like the gentleman you are and let the passenger think it over. Not another word from you. This method will win occurrences that if handled differently result in wordy hattles; make you feel miserable the rest of the day, hate your job; and make the passenger condemn our service to his friends.

STYLES AND TYPES

All kinds and types of people patronize your car. Complete service demands that you please all of them. This includes the man who has just come from a quarrel with his wife and who would like nothing better than to take his revenge out on you. Or, it may be the lady passenger who has just missed a bargain sale because the car she came on was not on time. It may be a bumped corn, dyspepsia, indigestion, stomach ache, or just natural cussedness or disagreeableness. It does not make any difference to you

what the cause is. A street car is a public place, and it may be best to let the passenger decide on the attention he or she wishes to attract by language or act. As for you—well, if our trainmen could not intelligently meet every such situation we should feel that something was seriously wrong. Keep Service in mind. Never sacrifice that to anger or act of yours.

DISCIPLINE

Sometimes it becomes necessary to use harsh measures to enforce full observance of the rules. The trainman who willfully violates rules will find it a hard matter to hold a position here. Suspension as discipline does not always signify that the lay-off is the end of the matter. It is not the desire of these companies to discharge competent men but the safety of our passengers and complete service to them justifies a careful weeding out of the careless and incompetent.

DON'T SAY DON'T

Never say "Don't" to a passenger of yours. Children are made incorrigible through constant "don'ts" of loving but unthoughtful parents.

Don't is argumentative and tends to arouse a desire to do just what is forbid. Never say to a lady, "Don't get off the car backward." For right away she will think I'll get off the car that way if I want to and it is none of your business. You will get better results if you say "Please get off the car facing the front." Too, "move forward" does not mean anything to the people standing in the aisle right at the entrance door. They are on the car and don't realize there is anyone else to get on. It is better to say, "Please step forward in the car so that others may get aboard."

Akron's Buses Were Powerful Influences in Developing Housing Sites

No. 1—Present-day standard White truck mounting Avery body.

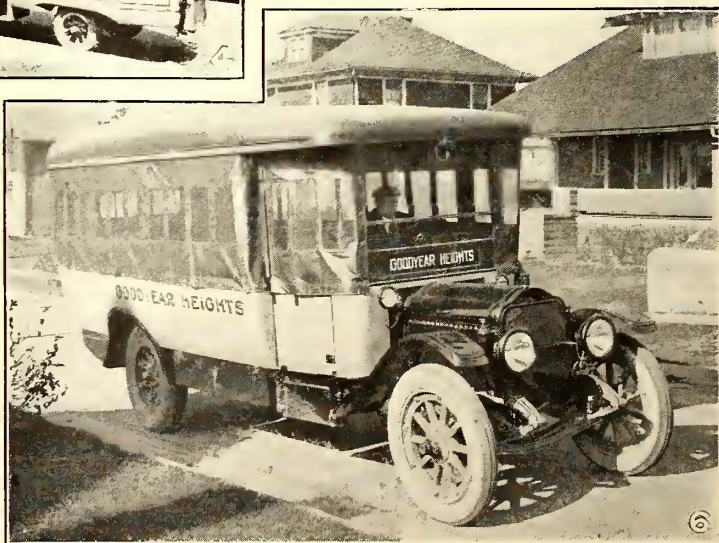
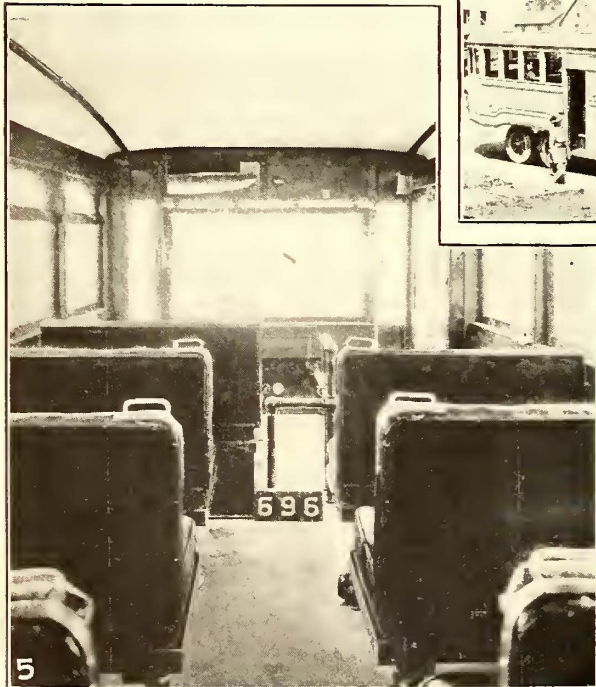
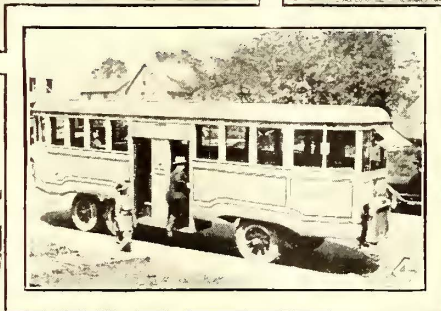
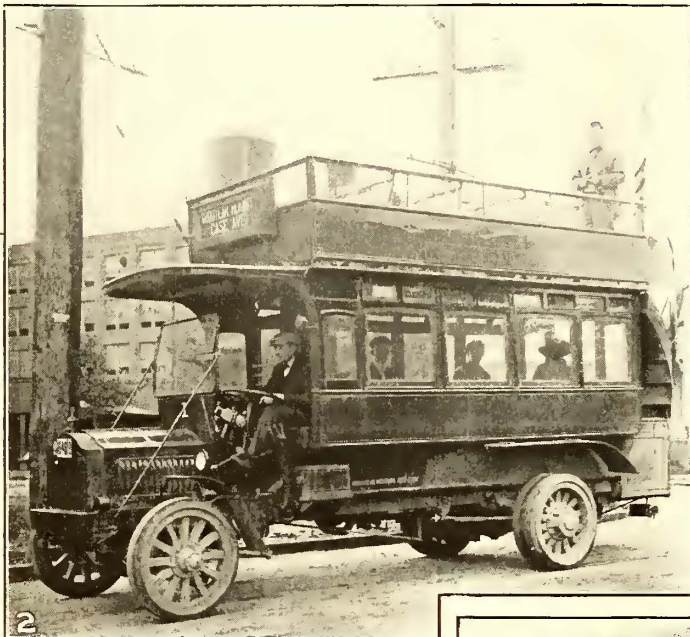
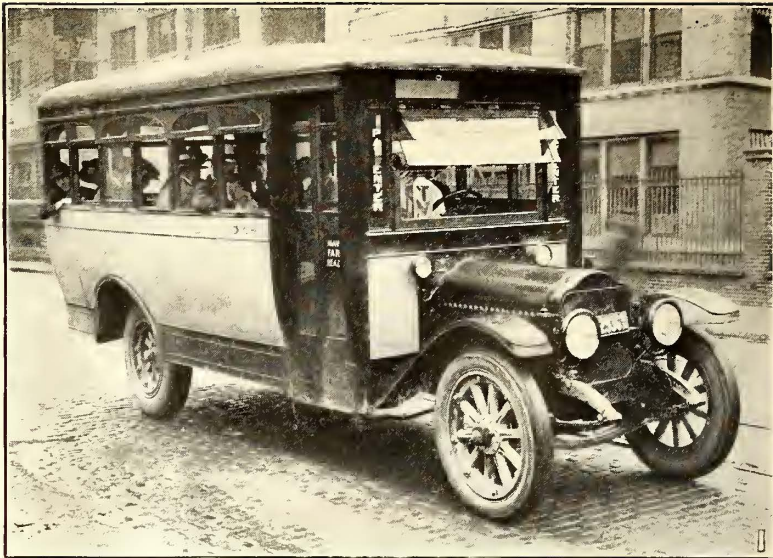
No. 2—Type of original bus put in service in September, 1915.

No. 3—Entrance to Avery type body showing fare box and location.

No. 4—Experimental six-wheel type vehicle, with 70-hp., 6-cylinder, $4\frac{3}{4}$ x $5\frac{1}{2}$ Wisconsin motor. This vehicle seats forty-four passengers.

No. 5—Interior of Avery body fitted with cross seats.

No. 6—First type of single-deck bus with open body.



Akron's Motor Bus Route

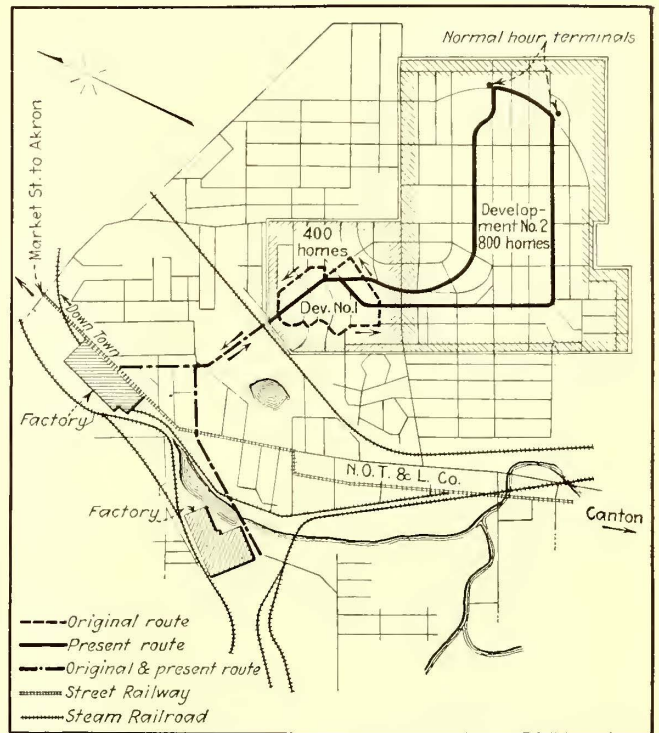
A Non-Competitive Route, Operated in Connection with a Housing Development, Proves that the Motor Bus Can Be Operated Successfully as an Auxiliary When Proper Service Is Given and Reasonable Fares Are Charged —Full Statistics Are Given

THERE is in Akron, Ohio, a bus transportation system that has been in operation several years. This bus line, although operated independently, is an auxiliary to the local street railway system and serves territory not reached by any other transportation service. The line, which in no sense is a competitor of the trolley system, was started by the Goodyear Tire & Rubber Company and is still owned by that corporation, and its purpose is to provide transportation for employees of the Goodyear company between the factory and a tract 2½ miles from the business center of Akron. This property, called Goodyear Heights, had been developed as a residential district in 1913 by the company because of the increasing difficulty which its employees found in obtaining attractive housing facilities in Akron. The first motor bus service was established in September, 1915, because of the need for transportation facilities. It has been the company's policy to make the bus line self-supporting and have sufficient net income after paying operating expenses to meet fixed charges and taxes, including the usual rate of interest on the investment required.

RATES OF FARE

The 3-cent cash fare established when the line was first opened in September, 1915, remained in effect up to December, 1917, when it was changed to 5 cents cash or eight tickets for a quarter. This ticket rate remained in effect until Sept. 1, 1919, when the ticket rate was increased to six tickets for 25 cents, or twenty-eight tickets for a dollar. On Feb. 1, 1920, the sale of twenty-eight tickets for a dollar was discontinued, and on Oct. 1, 1920, the ticket rate of six for a quarter was also discontinued. Since that time the fares have been 5 cents cash without any reduced-rate tickets.

When the bus route opened in September, 1915, the equipment consisted of but one 3-ton capacity



ROUTE OF MOTOR BUS AND CONNECTION WITH LOCAL TRACTION COMPANY AT EAST MARKET STREET

truck, on which was mounted a double-deck body, seating thirty-five people, seventeen on the upper deck and eighteen on the lower deck. The upper deck had cross seats while the lower deck had longitudinal seats. The truck was equipped with solid tires throughout, the rear wheels having double treads. An engine capable of handling 5-ton loads was used, due to the severe grades on the route.

In the spring of 1916 the double-deck bus was supplanted by one of the single-deck type, equipped with pneumatic tires. Among the advantages gained from the use of pneumatic tires was much better riding qualities.

The equipment since made standard consists of a 2-ton chassis equipped with a 5-ton motor, on which is mounted an inclosed body of the Avery type with longitudinal seats, and pneumatic tires 40 in. x 8 in. in the rear and 37 in. x 5 in. in the front.

It was found that the 2-ton chassis was adequate to carry the load and would stand the strain, but that a 5-ton motor was necessary due to the heavy grades over which the bus had to operate. This large size motor also has an advantage in obtaining more rapid acceleration after each stop and the buses are capable of making a speed of 30 to 35 m.p.h. where traffic conditions permit. Typical views of the present types of buses are shown in the accompanying illustrations. On Jan. 1 they comprised twelve of various types. There were three of the type B-64 with cross seats and

TABLE I—OPERATING STATISTICS GOODYEAR HEIGHTS MOTOR BUS LINE

	13 Months		Cal-endar Year, 1919	Cal-endar Year, 1920
	Dec. 1, 1917, to Dec. 31, 1918	Dec. 1, 1917, to Dec. 31, 1919		
Buses in operation at start of period	1	2		8
Buses in operation at the close of period	2	8		12
Average number operated per month	1.1	4.8		11.6
Total miles of bus travel	58,451	198,113		332,787
Total miles of bus travel on routes	57,938	194,151		326,622
Slack travel, to and from garage	513	3,962		6,165
Number of one-way trips	44,567	111,581		187,714
Average one-way trip distance (miles)	1.3	1.74		1.74
Time of one-way trips (minutes)	10.0	11.6		11.6
Number of bus-hours of service	7,428	21,572		36,291
Number of bus-hours available	8,113	33,060		79,344
Per cent of time buses in service	91.5	65.0		46.0
Bus-miles per hour of actual bus service	7.8	9.0		9.0
Total passengers carried	520,879	1,745,189		2,490,856
Number of passengers carried per month	40,068	145,432		207,571
Number of passengers carried per day	1,315	4,848		6,919
Number of passengers carried per bus-hour	69.0	80.9		68.6
Number of passengers carried per trip	11.90	15.60		13.30
Per cent passenger loading (21 seats)	55.7	74.3		3.3
Per cent maximum loading (35 passengers)	34.0	45.0		38.0
Number of passengers carried per bus-mile	8.91	8.80		7.48
Miles operated per gallon of gasoline	5.8	5.3		5.3
Miles operated per gallon of oil	56.7	69.2		102.2

It will be noted that the insurance item covers both passenger and public liability. As this item has rapidly become a burden it is questionable whether or not it is advisable to carry such insurance or assume the risk for the operators' account, as is done by other public service corporations.

More Open Cars Converted for One-Man Operation

Large Double-Truck One-Man Cars with Removable Sash Are Made from Fourteen-Bench Open Cars by the Eastern Massachusetts Street Railway

THE Eastern Massachusetts Street Railway has recently completed the reconstruction of thirty-seven former fourteen-bench double-truck open cars for use as one-man cars.

The accompanying illustrations show the original old-style open car body and its transition into a closed one-man car. An interesting comparison is furnished in one photograph between this reconstructed car and one of the standard Birney types of safety car. The car as reconstructed measures 41 ft. over all.

The first step in reconstruction was the removal of practically all equipment, including controllers, air brakes, electrical equipment, seats, running boards and old lighting fixtures. At the right-hand corners the longitudinal body sills were cut away to provide for the new door openings and the vestibule was reinforced with steel castings. The body posts on each side of the car were cut so as to allow the installation of two 2-in. x 8-in. longitudinal trussplanks on each side of the car.

Instead of the usual folding step, these cars were rebuilt with a pair of stationary steps of good width. This was accomplished by cutting quite deeply into the vestibule. Sets of folding doors were provided which are operated by pneumatic door engines, the width of the door opening being 42 in.

These reconstructed cars have a seating capacity of

forty-four, with nine cross seats on each side of the center aisle and two 36-in. longitudinal seats at each end of the car. New cross-seat mechanisms were purchased and wooden seats and seat backs were manufactured in the company's shop, utilizing the old open-car seats. These cross seats are 31 in. in width and spaced 30 in. back to back. The width of the center aisle is 24 in. Grab handles are provided.

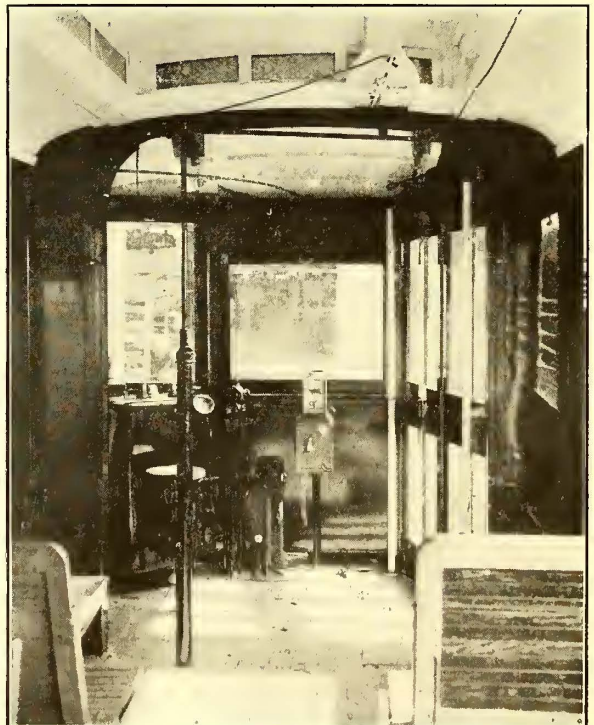
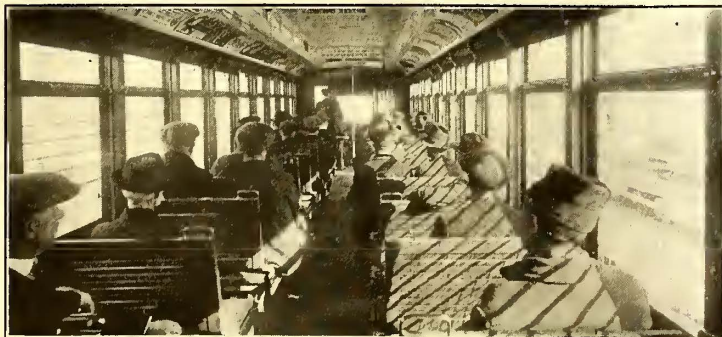
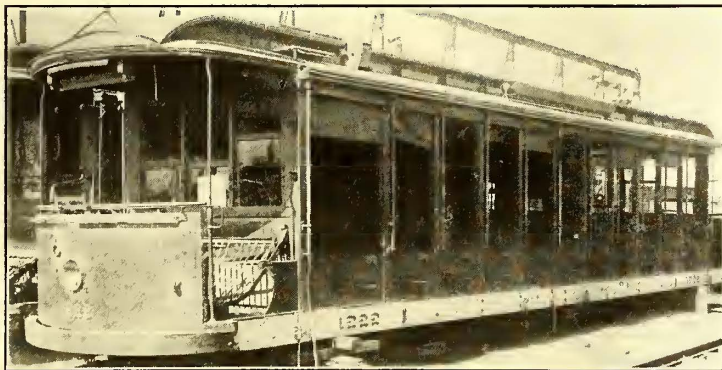
These cars are equipped with sixteen Consolidated cross-seat type heaters which were transferred from obsolete passenger cars. Interior illumination is provided by means of eighteen 23-watt incandescent lamps arranged in two rows along the clearstory.

One of the features of the reconstructed car is the use of portable steel sash, which may be completely removed during the summer if desired. This allows the car to do service practically as an open car. In years past, when this company regularly operated open cars on its lines in summer, it enjoyed quite a fair amount of purely pleasure-riding traffic, as it reaches many popular beaches, lakes and parks and operates through stretches of beautiful country. It is hoped that by making the new cars comfortable and giving them some of the advantages of open cars some extra summer traffic may be developed.

The signal system consists of twenty-four push buttons installed on the body posts between the windows. The Faraday electric line voltage buzzer system is used.

The original air-brake equipment and most of the original electric equipment of the cars were utilized, being replaced after a thorough overhauling.

The arrangement of the operating equipment, including the Johnson fare box, is shown by the accompanying photograph. The fare box is placed close to the dash and almost in the center, where it is most easily reached and watched by the operator but is well out of the way of passengers leaving the car. It is expected that incoming and outgoing passengers will naturally keep to the right.



AT TOP, LEFT, OPEN CAR BODY BEFORE RECONSTRUCTION. AT BOTTOM, LEFT, INTERIOR VIEW OF CONVERTED CAR. AT RIGHT, OPERATING END OF REMODELED CAR PHOTOGRAPHED DURING RECONSTRUCTION

The requirements of the Massachusetts Department of Public Utilities have been met by the installation of a safety device, accessible to passangers, which permits of any one shutting off the power, applying the air brakes and unlocking the pneumatic doors at both ends by simply pulling a conductor's valve. This device is described in more detail and the order relating to it is given in an article on page 1175 of this issue.

These reconstructed cars weigh approximately 40,000 lb., completely equipped, and the first few cost approximately \$3,000 each. It is believed the cost will be materially less when computed on the entire lot. The work of reconstruction was planned and supervised by W. C. Bolt, superintendent of rolling-stock and shops, and was accomplished in part by the Laconia Car Company, Laconia, N. H., and partly in the railway's shops.

The Eastern Massachusetts Street Railway has already converted into one-man cars a large number of



REMODELED CAR WITH BIRNEY CAR AT REAR

its double-truck box cars of the two-man type, has 250 standard one-man cars in service and has now completed the conversion of thirty-seven former open cars. The trustees have clearly indicated to the public they serve, and to the public officials, that the financial plight of the road is such that it is a case of one-man cars or no cars at all. When their program is complete, and they have already reached 90 per cent one-man operation, there will be only about fifteen two-man cars in operation, out of a total of approximately 600 operating cars. They are now operating one line of double-truck one-man cars into the heart of Boston.

Havana Increases Power Equipment

IN MAY, 1920, the Havana Electric Railway & Light Company made a contract with the Westinghouse Electric International Company to furnish two 25,000-kw. turbine-generating units with all auxiliaries. One of these machines is to be shipped about Aug. 1, this year, and the other eight months later. The first unit is to be installed in the present power plant alongside of the existing 12,500-kw. units. The second unit will take the place of one of these 12,500-kw. machines. With this plan the capacity of the present plant will be doubled. The existing boilers, when provided with new high-capacity furnaces and economizers, will be sufficient for the enlarged generating capacity. Except for the receipt of the necessary pipe, valves and fittings, the equipment for eight additional boilers and furnaces for burning Mexican crude petroleum is complete. Any

improvements that are to be made in the rest of the boiler plant cannot be determined until the oil-burning equipment has been fully tested.

Manufacturer Pays for Trolley Extension

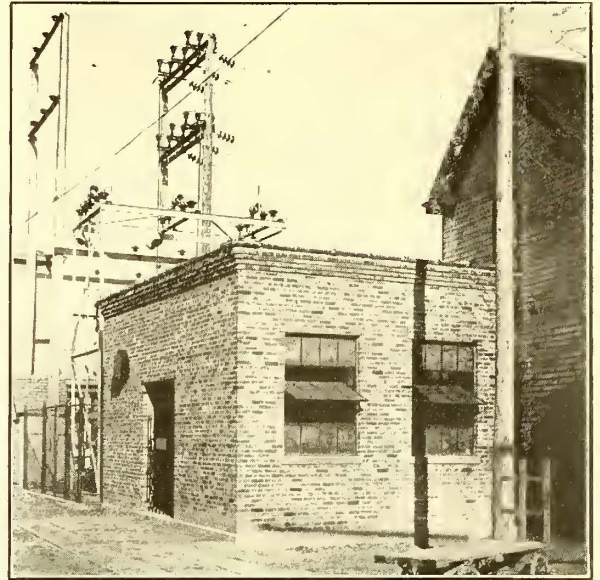
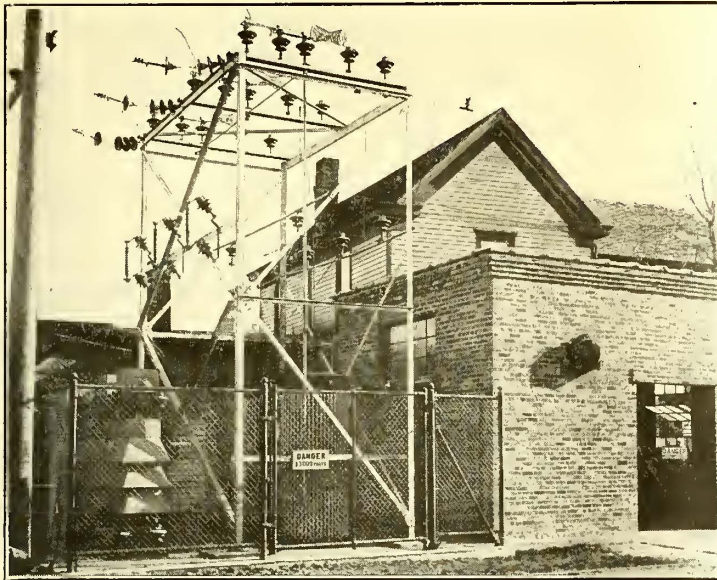
Earnings of Line Are Guaranteed for Five-Year Period—
Preferred Stock Given in Exchange for Cost
of Construction of the Line

AN UNUSUAL contract for a line extension was entered into in September, 1919, between the Madison (Wis.) Railway and Oscar Mayer & Company, who had built a new packing house a short distance outside of the city. The length of the extension involved was 4,150 ft. and the actual cost of construction was \$43,000. Negotiations between the packers and the company resulted in a contract, because of the inability of the company to finance the extension or to see how the line would be self-supporting within five years, and this contract provided that the packer should buy at par preferred stock of an amount equal to the cost of the extension.

The packer deposited in advance in a local bank \$30,000, which was drawn upon for the construction work. It was agreed that if the cost of the work exceeded \$30,000, the packer was to purchase additional preferred stock to cover that cost. The contract provides that no dividends will be paid for the first five years, but after that they shall become accumulative. The packer guarantees to pay the cost of operation of the extension for the first five years. A minimum service of three hours per day is provided, for which he must pay the company \$10 per day. For additional service of the first car in excess of three hours there is a payment of \$3 an hour or fraction thereof, with time figured from the time the car leaves the carhouse until it returns. If additional cars are required, a charge of \$5 for the first additional car for the first hour, \$4 for the second hour and \$3 for the third hour, or fraction thereof, is made. For the second and each additional car, a guarantee of \$10 per day minimum is made. The hours during which service may be requested are limited to those between 6 a.m. and 9 p.m., with Sundays and holidays excepted altogether.

The packer receives a credit of 5 cents per day per employee in his plant against these guaranteed charges. This credit is given on a monthly basis, but in no case is the credit to be in excess of the amount guaranteed. In other words, in no event does the railway pay the packer any money under this credit provision. The basis of crediting the packer was reached in a way that was intended to eliminate the expense of keeping accounts. The company estimated that one-half of the employees of the packer, on the average, would ride out and back each day. Consequently, 5 cents apiece for all employees per day was taken as the average business that might be expected. If, after five years, the packer should employ less than twenty-five people for a period of one year or more, or go entirely out of business, the company has the right to discontinue service and take up the track.

The extension was built with 73-lb. rail laid on 6-in. x 8-in. x 7-ft. cedar ties on a concrete base and with brick paving. It was made at the end of an existing line, so that service of one car is extended out to the packer's plant in the morning and again in the evening rush hour.



TWO VIEWS OF THE 500-KW. SUBSTATION AT SELLERSBURG, IND., WHICH IS TYPICAL OF THE CONSTRUCTION USED AT ALL RAILWAY SUBSTATIONS

Traction Power Obtained at Lower Cost

Interstate Public Service Company on Indianapolis-Louisville Line, Made
Up of Three Once Independent Properties, Inaugurates \$40,000
Annual Saving by Rehabilitation of Its Power System—
One Automatic Substation Included in Program

THE power supply system of the Interstate Public Service Company of Indianapolis has just been improved.* The work included the shutting down of one direct-current generating station and one 25-cycle generating station, the building of 54.6 miles of new 33,000-volt transmission line and the rebuilding of 58.25 miles of existing transmission lines for higher voltage, the making of arrangements for purchasing power at Louisville and Indianapolis, the junking of the rotary converter and other substation equipment at six substations, the purchase of new converters and switching equipment for ten substations and the erection of six new substation buildings.

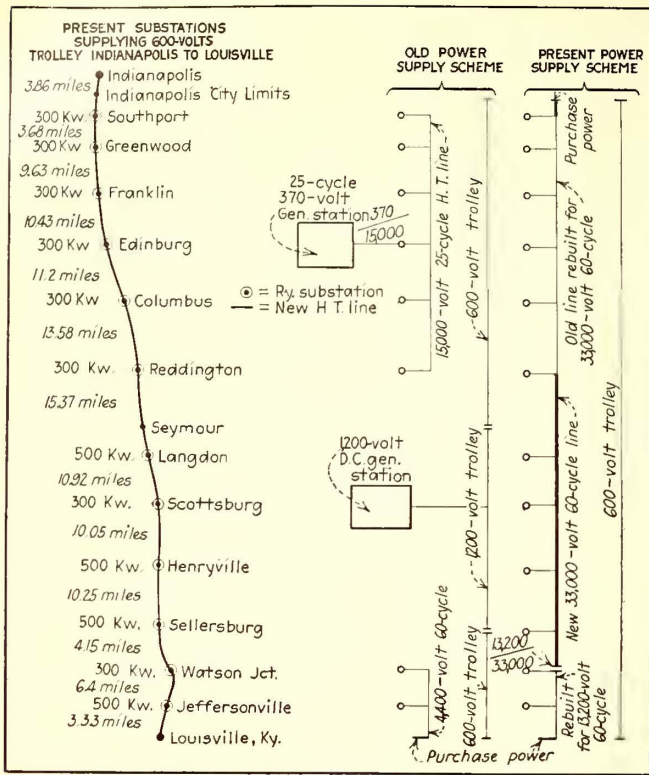
Originally, when the line between Indianapolis and Louisville was owned and operated by three different companies, the 58 miles from Indianapolis to Seymour was operated with 600-volt trolley current supplied by a 25-cycle, 370-volt generating station located at Edinburg, Ind., and distributed over a 15,000-volt transmission line extending to Southport on the north and to Reddington on the south and connecting with six rotary-converter substations. The 41-mile section of the line from Seymour to Sellersburg was operated at 1,200 volts trolley potential supplied by a reciprocating engine, direct-current generating plant located at Scottsburg, each engine being direct-connected to two 600-volt generators connected in series. Feeders extended approximately 20 miles each way from this power house. The 14-mile section of the line between Sellersburg and Louisville was operated with a 600-volt trolley current supplied from two converter substations, for which power was purchased from the Louisville Gas & Electric

Company and transmitted to it at 4,400 volts. These two substations were operated at 60 cycles frequency and no change in them was required except for the transformers, for which new ones were substituted to receive energy at 13,200 volts instead of 4,400 volts.

LIGHTING AND INDUSTRIAL POWER LOAD INVOLVED

An important consideration involved in the rehabilitation of the power-supply system for the interurban line was the fact that the Interstate Public Service Company also serves the towns of Greenwood, Franklin, Columbus and Seymour with current for lighting and power purposes. This practically necessitated 60-cycle energy, and rather than resort to the use of frequency changers to supply the lighting current for these towns, and because it had been determined that a good economy could be effected through the purchase of power at Indianapolis and Louisville which was of 60-cycle frequency, it was decided to substitute 60-cycle rotary converters for the 25-cycle equipment formerly in use. A 33,000-volt transmission line connecting all of the railway substations and the lighting substation was therefore built and arrangements made with the Merchants' Heat & Light Company at Indianapolis to supply the major portion of the energy required. The existing transmission line, extending from Southport to Reddington, was then reconstructed and spaced for 33,000-volt operation, and extended north about 4 miles to connect with the Merchants' Heat & Light Company transmission system at the city limits of Indianapolis. A new 33,000-volt line was also built from Reddington south to Watson Junction, where it was tied in with the Louisville Gas & Electric Company system by installing 33,000/13,200-volt transformers, the 4,400-volt line from

*See articles in issue for June 4, page 1027, for other improvements on this property.



DIAGRAMS SHOWING PRESENT LOCATION AND SPACING OF SUBSTATIONS AND LAYOUT OF THE OLD AND THE PRESENT POWER SUPPLY SCHEMES

Louisville to Watson Junction having been changed over for 13,200-volt service.

The 25-cycle substation equipments at Southport, Greenwood, Franklin, Edinburg, Columbus and Reddington were replaced with 300-kw., 60-cycle units, and at Edinburg and Columbus the installation included a new substation building. To serve that section of the line formerly operated at 1,200 volts, the old direct-current power house was replaced by four 500-kw., 60-cycle, six-phase, 600-volt substations located at Langdon, Scottsburg, Henryville and Sellersburg. Except at Scottsburg, where the converters and other substation equipment were installed in the shop, new buildings were erected. In all the stations where practical the

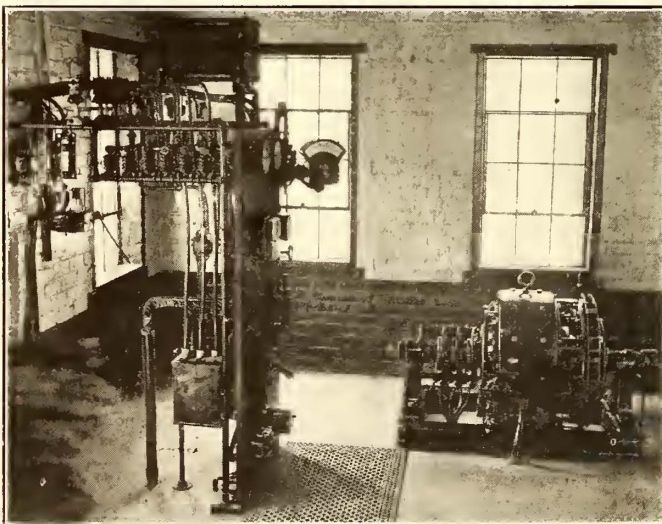
transformer station for the lighting and power load was combined with the railway substation and outdoor type transformers and high-tension switching equipment were used for both.

AUTOMATIC SUBSTATION LOCATED AT LANGDON

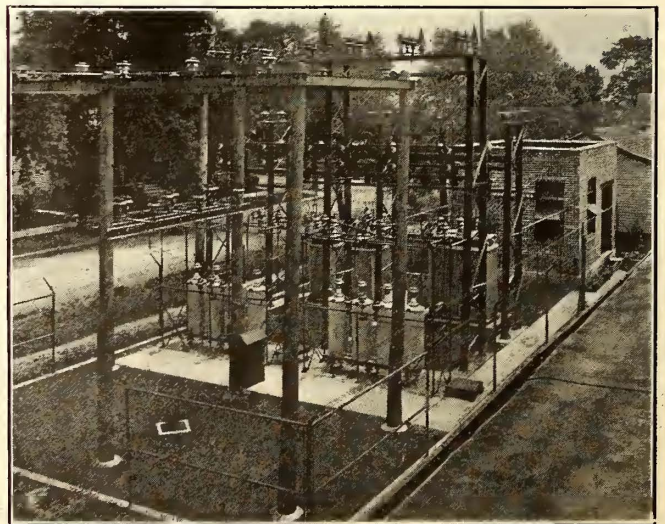
All of the railway substations are manually operated except the one located at Langdon, which is equipped with automatic control. Langdon is the only point where a substation is located at which the company does not have either a station agent or shop man, who would have to be on the payroll anyway. Between Seymour and Sellersburg, where there had been no substations previously, it was possible to locate all of the new substations except Langdon at points where they could be operated by regular employees of the company, so that the saving of labor derived from automatic operation was a factor only at Langdon. It is tentatively planned to install another 500-kw. rotary converter substation at Seymour. Beyond that, future requirements will be secured by installing additional converters in the existing substations, according to present plans.

An accompanying sketch shows the present substation spacing and pictures schematically the old and the new power supply system, from which the changes made can be seen at a glance. Pictures of several of the substations are also reproduced and these are typical of the construction followed throughout the system. The converter is housed in a small square brick building and the transformers and high-tension buses and switches, lightning arresters, etc., are installed outside the building.

A saving in the cost of power of between \$12,000 and \$15,000 annually was estimated to result from the shutting down of the Scottsburg direct-current power house, and \$25,000 additional by closing down the Edinburg alternating-current power house. A total saving of approximately \$40,000 a year has thus been made by shutting down the two obsolete power plants and arranging for the purchase of energy. No accurate comparison of the energy consumption per car-mile operated under the improved power and distribution system as against the old system is available owing to the incomplete sets of measuring instruments in use in the old installations.



TYPICAL INSTALLATION OF CONVERTER, SWITCHING APPARATUS, ETC. THIS PARTICULAR PICTURE IS OF THE 300-KW. SUBSTATION AT EDINBURG, IND.



TYPICAL COMBINATION RAILWAY AND LIGHTING SUBSTATION. THIS PICTURE SHOWS THE COLUMBUS SUBSTATION ADJACENT TO CARHOUSE

What Traffic Observations Are Needed

The Information Obtainable from These Observations Is Well Worth the Required Expenditure of Energy—Full Use Must Be Made of All Data Collected

BY J. KAPPEYNE
Railway Engineer, Syracuse

THE necessity of furnishing the best possible service consistent with the lowest possible cost is forcibly being impressed upon nearly every executive in the electric railway field today.

Good railway service requires quick response to the demand for service. Low costs, particularly during periods of high wages, are reflected by high average operating speed.

Schedules indicate the amount and the speed of the service the company purposes to furnish. It becomes, therefore, necessary that the schedules be constantly adjusted with every important fluctuation in the demand for service and that they be frequently revised whenever there exists undue interference with the established speed.

Unfortunately too many schedules are still in effect which were made as applying to conditions which no longer control. Frequently no effective means are taken to keep the traffic department properly informed of important changes affecting the demand for service or the operating speed. Often the old-fashioned method of having inspectors report such changes in conditions as they may have been able to observe gives the only information upon which a revision of schedules is based.

It is essential, in order to keep service and its cost abreast of the times, that systematic traffic observations be made at regular intervals. By properly grouping and analyzing the data collected from a so-called "on and off" traffic survey the following information may be readily obtained:

1. The number of passenger-miles, from which may be calculated the average length of ride per passenger.

2. The traffic density, or the average number of passengers per car, which enables the selection of the proper location for collecting multiple fares, and for turning switchback service.

3. The segregation of the profitable from the unprofitable lines, which is determined by the combination of length of passenger haul with traffic density.

4. The passenger traffic flow, which represents demand for service. This, when compared with the number of cars operated, or more correctly the passenger spaces, gives a relative picture of the quality of the service furnished.

5. The maximum load carried, which is the basis for determining the amount of service to be furnished.

6. The diversity factor of demand for service, used in establishing a reasonable standard for service.

7. The length of standing passenger haul, which is a factor to be considered in determining the adequacy of the service furnished.

8. The number and frequency of stops made, generally warranting a revision of car-stop locations.

9. The running time between time points, allowing the checking of schedule time against actual time, and often forcibly demonstrating the necessity of establishing different schedule speeds for various periods of the day.

10. The time when and the location where the lowest car speed is found. This usually indicates maximum interference by other traffic. Where feasible, conditions unduly retarding traffic should be remedied.

11. The greatest number of cars passing a certain point per unit of time, giving an indication as to track capacity and often demonstrating the necessity of re-routing certain cars on parallel streets.

12. The daily passenger load curve, which shows whether the traffic on each end of through lines is properly balanced.

13. The irregularity of headway, obtained by comparing actual headway with scheduled headway. This furnishes a relative measure of the efficiency of the traffic inspectors.

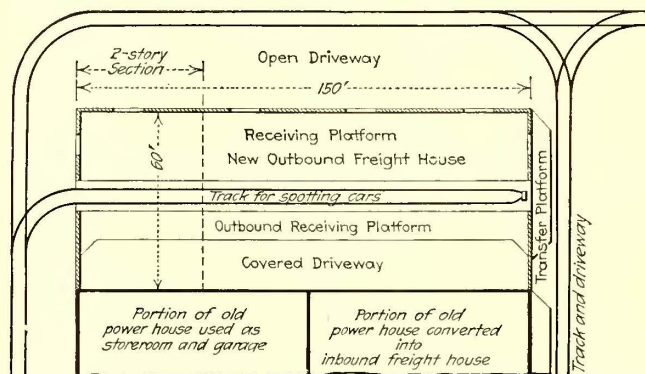
14. The location of points of heavy loading and of frequent interchange of traffic, indicating where inspectors should be stationed in order to give assistance to the greatest number of the riding public.

Railway officials are not always fully alive to all of the information obtainable from such a traffic survey. Frequently a survey is made with one particular object in view and the analysis of the other obtainable results is neglected.

If full use is not made of all the data collected from traffic observations, an opportunity may be lost to improve the service or to reduce the cost thereof,

New Terre Haute, Indianapolis & Eastern Freight House

THE Terre Haute (Ind.) Division of the Terre Haute, Indianapolis & Eastern Traction Company has recently completed a new outbound freight house for the convenience of Terre Haute shippers. The building is constructed of brick and is 150 ft. long by 50 ft. wide, with a two-story section along the front to provide office quarters on the second floor. An idea of the floor



SKETCH SHOWING FLOOR PLAN AND TRACK FACILITIES FOR NEW TERRE HAUTE FREIGHT HOUSE

plan of the building, track layout to serve it, etc., may be gained from the accompanying sketch.

Freight is received for shipment either from the outside driveway, clearly shown in the accompanying picture, or in case of bad weather or congestion teams can also deliver their loads by way of a covered driveway on the opposite side of the building. The handling of shipments is minimized by placing the names of different shipping points over the four receiving doors along the open driveway. The only trucking required then is to remove the merchandise from these doorways across the platform to the cars, which are spotted on a track extending through the center of the building.

There is a platform between the track and the driveway on either side of the track. The platform floors in the new building are made of concrete. The work of billing merchandise is facilitated by the installation of automatic springless weighing scales.

At the rear of the building a platform has been provided for convenience in transferring shipments from the inbound freight house to the outbound house. The inbound freight house is what formerly was the boiler room of a large power house which stands adjacent to the present new outbound freight house.

The Street Railway "Auto-Superintendent"

A Talk to Railway Managers About the Use of Automobiles by Railway Officials and the Effects of This Practice

(Contributed by the Manager of a Western Property)

HAVE your superintendent and inspectors acquired the automobile habit? If they have not your company is to be congratulated, for, once this habit is acquired, you lose the service of a once efficient official.

To learn if your superintendents and inspectors have formed the habit, you need not follow them about the city. These facts will come to you in the form of complaints from the few street car riders that are left to support street railways. These complaints will cover discourteous treatment by motormen and conductors, failure to stop for passengers, objectionable smoking and spitting in cars, dirty cars, employees smoking on duty, accidents caused by motormen entertaining friends on the front platform, failure properly to safeguard the infirm, the very old and the very young passengers and a good many other complaints of a quite similar nature.

You will also hear from the city officials. Your right-of-way pavement is being neglected, unpaved portions of the track are not kept ballasted, sprinkling of right-of-way is indifferently done, bad low joints are in the track and the traffic ordinances are continuously being violated by motormen.

You will also hear from the bondholders and you will explain to them that the automobile travel is cutting into your gross revenue. So it is, but much of the fault lies with the official who has formed the automobile habit. It becomes too slow for him to ride any longer in the street cars, yet he expects other people to do so. It is pleasant indeed to a motorman or conductor, and to the passengers, on a slow-going street car, to have the street railway superintendent frisk past the street car in his automobile, at a high rate of speed, and "give his dust" to the people in the street car. Not a good example to set as a business getter. It makes a passenger feel that "the world owes him an automobile." He might even feel that his money is helping the corporation buy automobiles for its officials and that street railway fares are entirely too high. Office work is real irksome to the joy-riding official. He neglects this entirely or puts it off for a stormy day when automobile riding becomes unpleasant.

The writer believes that the day is not far distant when owners of public utilities will check up on their automobile expense and eliminate some of the joy riders. They can be found on the payrolls of electric, gas and water companies as well as the street railway company.

Letters to the Editors

"Get the Young Engineer While the Getting Is Good"

To the Editors:

In reading the June 4 issue of the *ELECTRIC RAILWAY JOURNAL* I found the following article: "Get the Young Engineer While the Getting Is Good." This article takes up the slowness of electric railways in absorbing young engineers into their organization.

I have just been graduated from the University of ——— with the degree of bachelor of science in electrical engineering. I desire very much to attach myself to some electric railway company and "make good" with that company.

Since you are in touch with the various electric railways of the country, perhaps you know of some opening for a young engineer. If so, will you please let me know to whom I should apply.

1921 GRADUATE.

[If any one is looking for a young man like this, his name and address may be had on request.—EDITORS.]

Single Entrance Satisfactory in Terre Haute

TERRE HAUTE DIVISION, TERRE HAUTE, INDIANAPOLIS AND EASTERN TRACTION COMPANY

TERRE HAUTE, IND., June 15, 1921.

To the Editors:

It would seem to me that the very excellent letter of Mr. Gove in your issue of June 11 would serve to close the discussion of safety car design standards that has been had in the *ELECTRIC RAILWAY JOURNAL* during the past few months, and which I have followed with keen interest.

Perhaps you would not object to granting the privilege of your columns for just a word of approval of those who have urged sticking to Birney car standards.

Some months ago the writer made the statement that we attributed a large measure of our success in the operation of Birney cars to the fact that we had adhered religiously to the standards set by the designer and builder, taking on only such changes on our various and progressive purchases as had been incorporated by the designer and builder for the sake of improvement over the original design. These have involved only an improved truck design and a change in the operator's seat. The statement referred to would be just as true today.

Perhaps the operation of safety cars very nearly six million car-miles in the last two and one-half years and the operation of 100 per cent safety car service during the last six months entitle us to express an opinion. At any rate we have not seen any of the changes in design of the Birney car that, to our mind, improve its serviceability or its adaptability.

We have operated the standard car with every varying degree of density of traffic from 15 cents to 54 cents per revenue car-mile (daily average of 5-cent fare) and we are still "for" it.

I think that some of us tend to the feeling that it is up to us to do not only our own thinking but that

of the public as well. The human race adapts itself to conditions and does not willingly change those conditions as long as they are comfortable and reasonable. The Liberian negro, accustomed to carrying his load on his head, still continued to do so even after the white man had furnished him a wheelbarrow.

I have seen in one of our large cities the bulk of the short-haul passenger traffic handled by motor buses of a seating capacity of twelve to twenty, each of these buses with only one door for both loading and unloading. I doubt if there is a demand on the part of the bus passengers or a serious thought on the part of the bus owners themselves to alter the design of these buses so as to facilitate loading, unloading or provide more standing room.

It seems that many are still of the opinion that the safety car is a small town car and that its design, to make it adaptable to large cities (which after all are in the main simply groups of smaller cities) must be modified or changed. Yet our experience convinces us that a property earning anywhere around 30 cents per car-mile (on the basis of a 5-cent fare) at one-minute headway has a fertile field for the safety car of standard Birney design.

E. M. WALKER.

Railways Should Be Protected Against Unjust Competition

THE SOUTHWEST MISSOURI RAILROAD

WEBB CITY, Mo., June 11, 1921.

To the Editors:

When hard surfaced roads are built parallel to steam or interurban lines and are thrown open free to the use of the heavy truck, whose driver many times has little regard for other travel, there is little benefit to the farmer, manufacturer, business man, pleasure rider or consumer. The construction of these roads places an additional burden in the way of taxes, serves only a small portion of the country and allows certain classes to pursue their occupation without paying anything toward road building or upkeep. Eventually such road construction makes the consumer pay more for what he buys and the producer realize less on what he has to sell.

Not many of us ever stop to figure out who it is that is furnishing the money for building good roads, nor what the motive may be when certain routes are selected. But when the acts of a few men directly or indirectly cripple our large enterprises by taking away the cream of their business, the community at large must pay the bill. Let us not fool ourselves nor be fooled by the silver tongued orators into the belief that business can be successfully carried on without invested capital. It makes no difference whether this money is furnished by the federal, state or county authorities or by private subscriptions. Those using these roads for their own business should pay liberally toward the upkeep. The financial standing of a well-managed railroad and public utility is as vital to the life and development of a community as its financial and commercial institutions and should be protected against unfair attacks or unjust competition, so that its customers may receive full benefit derived from such enterprises.

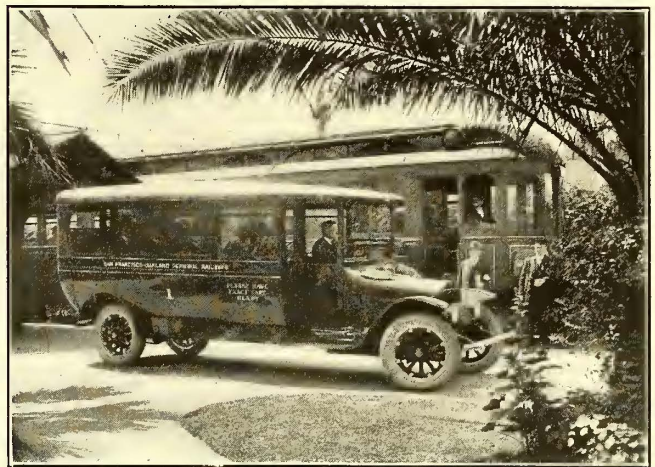
Many of the good old American type of citizens, who believe in equal rights and justice to all, have been slumbering on their rights for years, knowing they were surrounded by Nature's gifts in profusion.

They have expected both the commercial and civic interests to develop, while they sleep on until the country has reached a point where it needs the advice of wise and conservative men. Extravagance, shiftlessness and disregard for the rights of others were some of the lessons learned from the world war. Railroads, public utilities, trucks and automobiles, each has its field and all are essential in the development of our commercial interests. Good roads are needed to develop our resources in every section not served by other means of transportation, but we shall be going backward in a commercial way when we allow these roads to be built and used to cripple other enterprises.

E. J. PRATT,
General Manager.

Key Route Starts Bus Operation

THE San Francisco-Oakland Terminal Railways, Oakland, Cal., in May, 1921, opened a new line, using gasoline driven motor buses. This line serves as an extension of the company's rail service and extends



THE KEY ROUTE SUPPLEMENTS ITS RAILWAY SERVICE BY OPERATING A LINE OF MOTOR BUSES

from the Fortieth Street Station up Piedmont Avenue, thence over the so-called old Moraga Road to the town-site of Montclair, a distance of 291 miles. Four buses have been purchased and two are needed to fill the twenty-minute headway that is maintained from 5:40 a.m. to 8:40 p.m.

Special bodies were built by A. Meister & Son, Sacramento, Cal., and have a capacity of eighteen seated passengers. The bodies are mounted on a 2½-ton White truck chassis of standard design and support. Pneumatic tires are used. The original equipment consisted of Firestone cord tires throughout.

The basic rate of fare for a ride on the bus is six cents with free transfers to and from the city line with which it connects, but no free transfers are issued to the suburban line for San Francisco, with which it also connects.

The underlying reasons for putting in buses in preference to rail service are stated as being purely economic.

The company estimates that with an investment of \$26,000 for the four buses, as against one of \$138,000 for rail cars and overhead wires including feeders, the service rendered can handle the traffic to be developed for the time being.

Equipment and Its Maintenance

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

New Cars for San Francisco

Car Bodies with Steel Sides Applied to a Wooden Framework Built in Shops of United Railroads—Trucks and Motors Taken from Cars that Have Become Obsolete

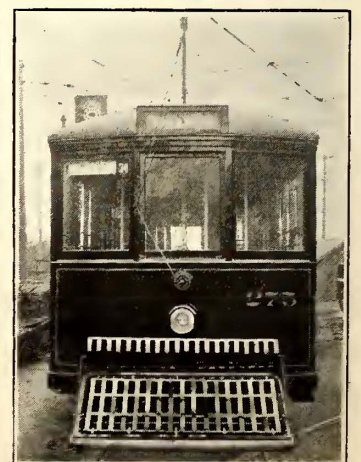
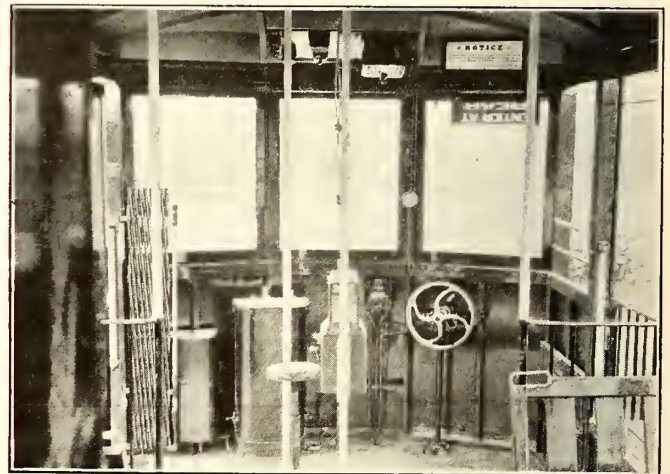
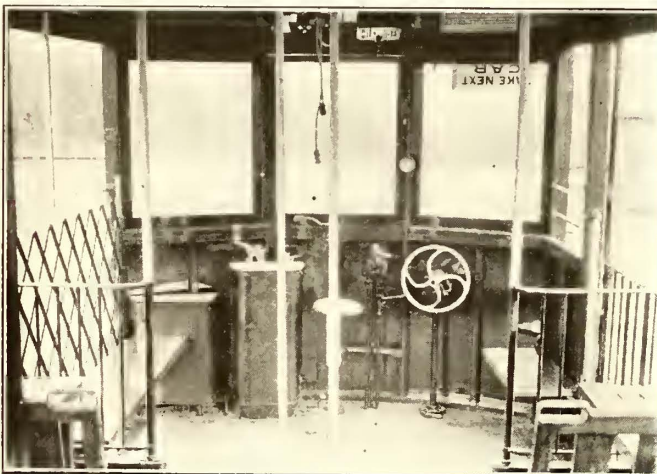
THE United Railroads of San Francisco have been building their own car bodies since 1913 and have been previously equipping them by using trucks and motors from cars that have become obsolete. During 1920 twenty cars were built and eleven of these have now been placed in service, these cars being equipped with new trucks and electrical equipment.

The new cars are of the open-end type, having a closed central portion 15 ft. 6 in. long with an open portion at either end 8 ft. 5 in. long with a platform 7 ft. 4 in. long. This type of car is popular in California as, due to the local climate, passengers can ride in the open section with comfort during the entire year. The closed section of the car has longitudinal seats, while the open one has four cross seats and two short longitudinal seats, seating two passengers each. There are also four upright stanchions on either side of the

car in the inclosed portion. These are made of $\frac{3}{4}$ -in. pipe and extend from the floor to the roof, acting as grab handles, seat supports, roof stiffeners and seat spacers.

The car body consists of a wooden frame with No. 12 gage steel sides. The entire bottom framing and all posts and plates are of Oregon pine. The inside finish of the closed section is of gum and the sash are of teak. No headlining is used in the car. The entire ceiling is painted a light drab and all stanchions white. Due to the severe dips in the track that exist at junctions of track on steep grades and level track it is impossible to use a lower step of less than 15 in. in height. The platforms have a 2-in. ramp and also a 2-in. crown. There is also a 2 $\frac{1}{2}$ -in. ramp from the end sill to the center of the bolster. The bolster used, as shown in an accompanying illustration, is of somewhat unusual construction. The top consists of a straight plate, while the bottom member has very slight offsets and the end angle is a machined steel casting. The fillers consist of two 7-in. channels, as shown.

Accompanying illustrations show the appearance of



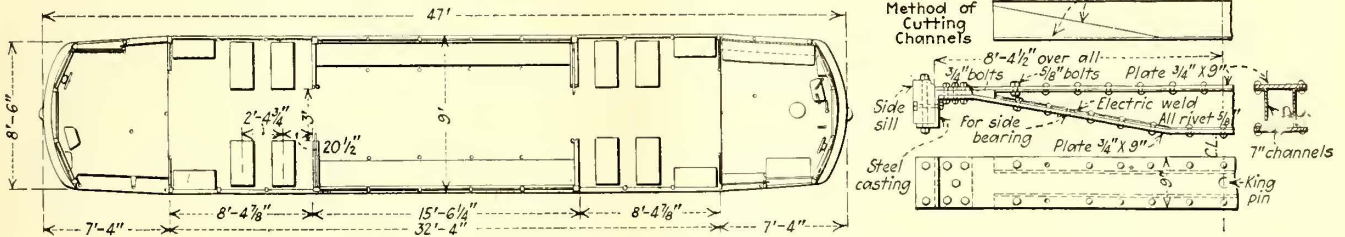
AT TOP, TWO INTERIOR PLATFORM VIEWS; AT BOTTOM, SIDE AND END VIEWS OF THE NEW CAR

the car. The open-end portions are equipped with storm curtains, the three curtains for each side being fastened to one roller, which is entirely under the control of the car crew, so that passengers cannot lower or raise them. When in the down position the curtains are fastened to the outside of the car by hooks and tightened manually.

All lighting wires, auxiliary and trolley wires are carried in wooden ceiling moldings which run straight through the car from end to end, and all switches are located above the motorman's head. The power cables are inclosed in a box in the body section of the car and

accessible to passengers and their use in an emergency shall be posted in a conspicuous place in the car.

The first part of the above order referred to the standard Birney car, and to conform with the requirements of the Department of Public Utilities, as applying to the 250 Birney cars which the Eastern Massachusetts Street Railway now has in regular operation, a standard conductor's valve is being installed, located in the center of one side of the car immediately below the advertising rack molding. This conductor's valve is connected with the emergency control line by means of



AT LEFT, SEATING PLAN OF NEW SAN FRANCISCO CAR. AT RIGHT, BOLSTER CONSTRUCTION

run in duraduct from end sill to controller. Conduit is used for motor leads and resistance wires.

The car seats fifty passengers and weighs 36,000 lb. complete. The trucks with wheels and axles weigh 11,560 lb. and the motors, gears, pinions, etc., 7,760 lb. The car body with all attachments weighs 16,680 lb. The trucks are the Standard 0-40 double-truck type with 4-in. axles and 30-in. wheels. Other equipment details consist of the following: Four GE-247-D 40-hp. motors, two K-28-E controllers, two MA-13 fuse boxes, two MR-13 circuit breakers, two US-15 trolley bases, one DH-10, 10-ft. Westinghouse compressor, one 8-in. brake cylinder, one type E-1 American slack adjuster, one 16 x 45 air reservoir, one Westinghouse type H-1 emergency valve, two conductor's valves, U. R. R. car signs, Johnson fare boxes, Golden Glow headlight.

Safety Devices on Bay State Cars

Ways in Which Eastern Massachusetts Street Railway Is Equipping Its One-Man Cars to Conform to the Order of the Department of Public Utilities

BY W. C. BOLT

Superintendent of Rolling Stock and Shops, Eastern Massachusetts Street Railway, Chelsea, Mass.

ON NOV. 8, 1920, the Department of Public Utilities of the Commonwealth of Massachusetts entered an order relating to safety devices on street railway cars. One of the requirements of this order called for the installation of additional safety devices on so-called one-man cars. The section of the order follows:

Every street railway car operated by and in charge of one man shall be equipped with either (1) a device so designed and maintained that upon the release of the controller of the car by the operator the motive power will be cut off from the propelling motors of the car and the brakes will be applied, together with a device located in a conspicuous place to the rear of the front platform and vestibule of the car and accessible to passengers by the operation of which a door at the rear of the car will be unfastened so that it can be opened from the inside of the car, or (2) shall be equipped with a device located in a conspicuous place to the rear of the front platform and vestibule of the car and accessible to passengers by the operation of which the motive power will be cut off from the propelling motors, the brakes applied and a door at the rear of the car unfastened so that it can be opened from the inside of the car. Instructions as to the location of said devices

a 3-in. pipe. The operation of this valve by a passenger will apply the emergency brakes, cut off the power from the propelling motors and unlock the rear door, as well as supply sand to the rail. The following sign is being installed adjacent to this conductor's valve instructing passengers in the use of the valve:

EMERGENCY VALVE

In case of accident, PULL CORD to stop car and unlock rear door

The second section of the order relates to cars which are not equipped with the standard safety devices and applies specifically to some 420 double-truck cars which the Eastern Massachusetts Street Railway is operating on the one-man plan at the present time.

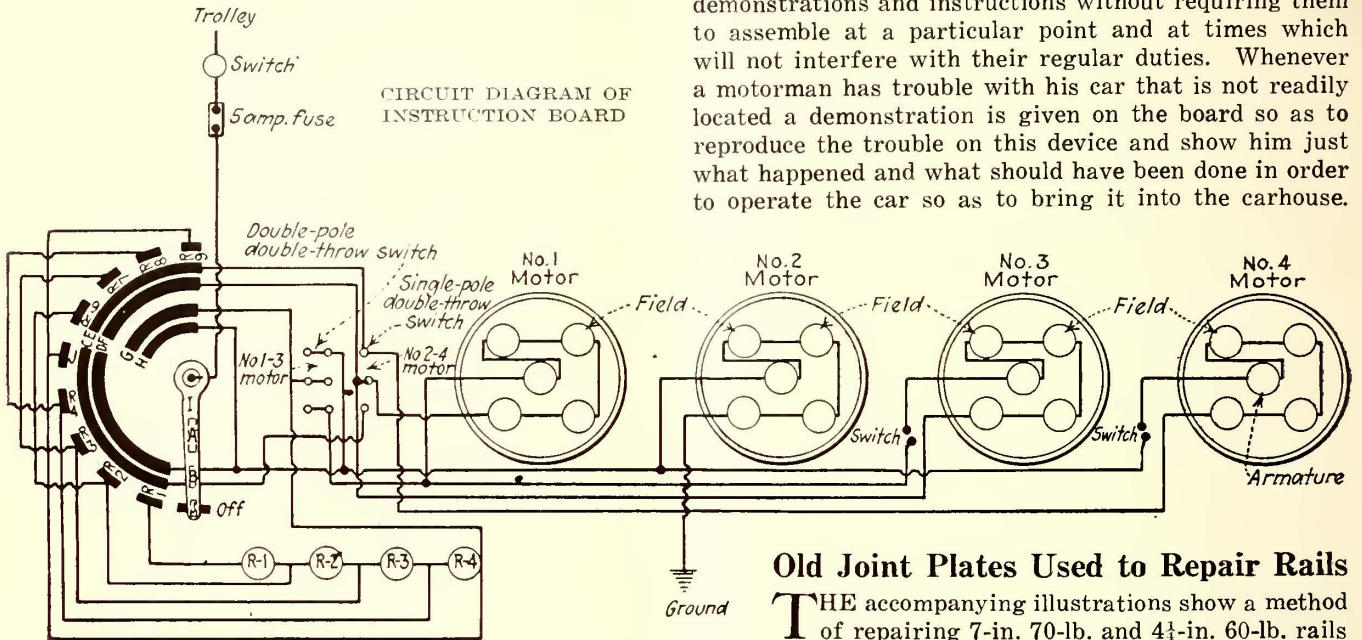
To conform with the order, as applicable to these double-truck, one-man cars, our company made a thorough study of the problem in conjunction with the leading equipment manufacturers, which resulted in the installation of the following equipment: Each car will be equipped with a conductor's valve located in the center, on one side of the car. This conductor's valve is connected with an emergency valve located on the inside of the car, underneath one of the seats, and is also connected with two pneumatic door engines; one on the right-hand door of each vestibule. A separate pipe line operates a small circuit breaker knock-out cylinder and, when application is made, throws the master control switch, thus cutting off the power. On some cars which are not equipped with a master control switch, two small knock-out cylinders are installed, throwing the two circuit breakers. On other cars the knock-out cylinder operates a small control-circuit switch.

To provide sufficient reserve of air in case of emergency, an additional air reservoir is likewise being installed on these cars, thus providing reserve air which is passed directly into the brake cylinder. When the installation is complete, any passenger, in case of accident, by pulling the cord attached to the handle on the conductor's valve, can shut off the power from the propelling motors, apply the brakes to the car and unlock the rear door of the car, thus performing the functions required by the Public Utilities Department. A sign similar to the above is being installed on these cars also.

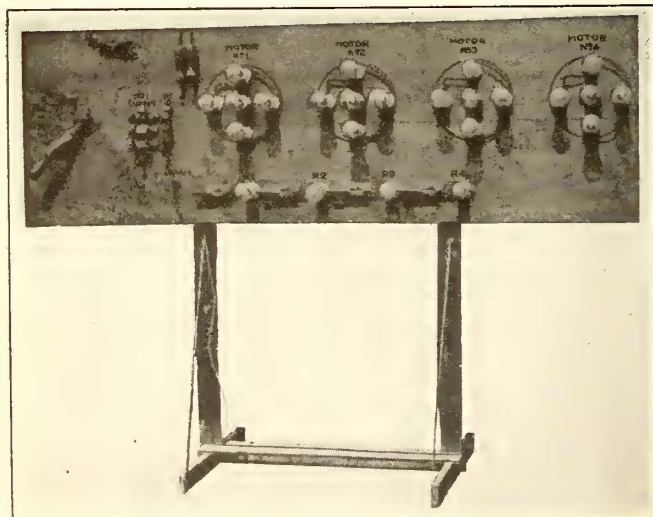
Portable Instruction Board

Device in Use by the Kentucky Traction & Terminal Company for Instruction of Motormen Has Proved of Great Assistance in Insuring the Proper Operation of Cars and Equipment

THE accompanying illustrations show a portable instruction board designed by E. M. Carr, general shop foreman Kentucky Traction & Terminal Company, for use on its system to instruct motormen in the various operating circuits of cars. The board shown



is for a four-motor equipment, but a similar board can be used for a two-motor equipment if desired. The circuits through the motors and resistors are indicated by lamps. The motor circuits consist of four groups of 23-watt Mazda lamps, each group consisting of five lamps and each group representing a motor. Of the lamps in each group the center lamp represents the armature and the four other lamps the four field coils. Four lamps located at the bottom of the board represent the car resistors. The several steps of the controller are provided by operating the rheostat at the left of the board. By feeding this controller a notch at a time, the



PORTABLE INSTRUCTION BOARD

exact conditions under which the motors successively receive their current are shown.

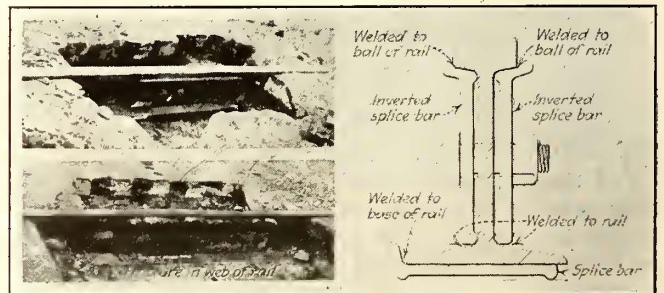
Defects in motors, cables, rheostats, etc., are imitated by unscrewing lamps from the sockets so as to break the circuits and by the use of cut-out switches shown on the board. These cut-out switches are also used to demonstrate how a car which may "have trouble" can be operated. The circuits are arranged so that they can be operated on 500 or 600 volts as available.

As the board is portable it can be taken to the different carhouses on the system and motormen can be given demonstrations and instructions without requiring them to assemble at a particular point and at times which will not interfere with their regular duties. Whenever a motorman has trouble with his car that is not readily located a demonstration is given on the board so as to reproduce the trouble on this device and show him just what happened and what should have been done in order to operate the car so as to bring it into the carhouse.

Old Joint Plates Used to Repair Rails

THE accompanying illustrations show a method of repairing 7-in. 70-lb. and 4½-in. 60-lb. rails used by the Springfield Traction Company, Springfield, Mo. Previous to the use of this method the practice of the company was to cut out the defective sections of rail and replace with sections about 8 ft. long. This method of repair required two sets of joint plates, and in addition the expense for cutting out the section was somewhat high.

The method now used consists of using old continuous joint plates by cutting off the portion that goes



AT TOP, LEFT, JOINT READY FOR WELDING; AT BOTTOM, LEFT, JOINT WITH REPAIRS PARTLY COMPLETED; AT RIGHT, INVERTED SPLICE BAR WELDED RAIL JOINT

underneath the rail but leaving the flange at the other end. These plates are applied to the joints with the wide flange uppermost as indicated in the accompanying illustration. In addition to using one of these joint plates on either side of the T-rail an additional plate is placed underneath the rail joint and all three plates are welded along the edges as indicated. This type of construction has proved extremely satisfactory on a line with two and one-half minute headway.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

\$4,000,000 for Improvements

Mr. Mitten Plowing Money Back Into Property and Increasing the Stockholders' Equity

Approximately \$4,000,000 from earnings will be plowed back into the property of the Philadelphia (Pa.) Rapid Transit Company during 1921 in additions and improvements. According to President T. E. Mitten adequate provision for necessary repairs, renewals and improvements could not be made during the wartime period. Militating against carrying out the work then were the high cost of material, the impossibility of securing sufficient labor and the money shortage due to delay in securing increased fare.

The very extensive program of repaving undertaken by the city requires during this year the rebuilding of more than 90 miles of track construction, or more than double the usual undertaking. Besides there are more than 60 miles of trolley wire renewals, and certain car improvements, representing the making of center exits on near-side cars, the purchase of one-man cars for the unimportant outlying lines, the purchase of modern snow sweepers, and additional shop and carhouse facilities.

Of this \$4,000,000 which it is planned to spend \$2,000,000 represents renewals to property and will therefore be added to operating costs. The remaining \$2,000,000, representing additions to property, is properly capitalizable, but because of the fact that the company has no securities now salable from which new capital can be secured, the estimated \$2,000,000 of net earnings for 1921 which would otherwise be available for dividends on stock must be used to meet the cost of this new construction.

The practice of appropriating Philadelphia Rapid Transit surplus to provide for the capital needs of the property conforms with the procedure of the past ten years of the present management. During that time there was earned a surplus of \$10,051,000. Of this, however, only \$5,846,000 was declared in dividends. The remaining \$4,195,000 has been used for construction purposes and acquiring new property.

In the matter of traffic handled Mr. Mitten stated that for each of the ten years 1911-1920 there was an average yearly increase of 46,827,145 passengers. The system, however, during the first five months of 1921 not only suffered the loss of this normal increase, which approximates 4,000,000 passengers per month, but has actually carried 24,401,705 fewer passengers than were carried during the same months

of 1920. In May alone the traffic decreased 10 per cent, which, if it continues, will mean supplying the public with 10 per cent better service.

Passenger earnings for the first five months of 1921 increased \$2,451,456 over the corresponding period of 1920. Mr. Mitten says that \$4,500,000 of increased passenger earnings for the full year 1921 as compared with 1920 is all that can be now counted on in view of this declining rate of monthly increase. Operating costs are higher because of the increased allowance required for renewal account necessary to make the desired improvement in the condition of the property. This, together with sundry improvements in service, will not only use up the money saved through decreased wages, but in addition serve to increase considerably the total costs of operation. The net income for the year 1921 is estimated at \$2,000,000.

Pittsburgh Receivers Authorized to Start Improvements

The receivers for the Pittsburgh (Pa.) Railways have been authorized by the United States District Court to proceed with the company's share of the work of widening East Carson Street from the Smithfield Street Bridge to South Seventh Street. This authorization has eliminated litigation which threatened a long delay in the work as the city had previously filed a bill in equity asking that the receivers be compelled to perform this work. Litigation over this bill would have delayed the improvement for months as had there been an adverse decision in the suit in the District Court the city had intended to appeal to the higher Federal courts.

The thoroughfare, one of the big municipal projects, is to be widened from a 50-ft. to a 75-ft. street, at a cost of \$500,000. The cost to the receivers of the Pittsburgh Railways will be \$115,000. The receivers asked the court for the authority to do the work. With this permission granted it is hoped to have the work finished by October. The railway will relay and realign its tracks, relay the paving within the track area and 1 ft. on either side with reclipped stone block paving, and make such changes as are necessary in the overhead construction.

Trackless Trolley Considered for Toledo.—Street Railway Commissioner Cann at Toledo, Ohio, is collecting data on the trolley bus and has already intimated that such cars may be used to provide a new cross-town line in that city.

Arbitrators Cut Wages

Men on New York State Lines Reduced 11.7 per Cent—Maximum for Trainmen Fifty-three Cents.

Motormen and conductors of city lines of the New York State Railways will get a basic wage rate of 53 cents an hour from May 1 of this year to May 1, 1922, under an award announced on June 18 by the arbitration board, consisting of Judge Arthur E. Sutherland, impartial member, and B. E. Tilton and James H. Vahey, representing the company and the Amalgamated Association, respectively. This is a reduction of 11.7 per cent under the basic rate of 60 cents an hour of the 1920 agreement.

By this award motormen and conductors serving for the first three months will get 49 cents an hour, for the next nine months 51 cents, and after a year the full 53-cent rate. The pay of shop men and miscellaneous employees is reduced 2½ per cent from the rate fixed a year ago, and watchmen, car cleaners, car washers, track sanders, track cleaners, flagmen at crossings, chauffeurs, car placers and unskilled laborers generally are reduced 15 per cent.

Under this award the lowest rate that will be paid will be to unskilled carhouse and other laborers. They will get 42½ cents an hour.

There were 102 proposed changes in the working agreement, most of which were disposed of by agreement between Mr. Tilton and Mr. Vahey without the interposition of Judge Sutherland. Few changes, however, over the 1920 agreement were decided on, and those that are made were decided on in the expectation they will result in betterment of service and will tend to greater efficiency and simplicity of operation without injustice to anyone. The provision for the basic nine-hour day is continued, with a leeway of three-quarters of an hour to complete schedules when necessary.

No important changes are made in the matter of "swing" runs. The company proposed they should be completed within fourteen consecutive hours and in no case exceed fifteen hours. The 1920 contract provided that at least 60 per cent of all schedule runs shall be laid out with outside time not to exceed eleven hours, and "in no case is a schedule run to have outside time in excess of fourteen hours." Provision for overtime extra under this clause, in the 1920 contract, is discontinued, however, but the men are given the option of working this overtime.

By the award motormen and conductors on interurban lines of the com-

pany will get a basic rate of 55 cents an hour. For the first three months they get 4 cents an hour less and for the next nine months 2 cents an hour less. Lines affected are the Utica Interurban, Sodus Bay Line, and the Rochester & Eastern. Men of the Oneida line get 3½ cents an hour more.

The award provides that operators of one-man cars, now running in Syracuse and contemplated for Utica, shall get 5 cents an hour more than motormen and conductors. This is the demand made by the men.

All three of the arbitrators signed the award.

City Outgeneraled by Company Talent

Paul H. Maloney, Commissioner of Public Utilities at New Orleans, La., in a lengthy report to the Commission Council on June 14, confirms the opinion generally prevalent that the present city administration is unable to cope with the traction problem and is sorely in need of men with proper training and experience adequately to safeguard the interests of the city. He said:

It must be remembered that the present administration is a new one, unfamiliar with the affairs of the city of New Orleans and without the benefit of experience or expert training and advice.

He contrasted the position in which the city now finds itself with that of the New Orleans Railway & Light Company, with its formidable array of legal and engineering experts, who were, he said, conducting a "propaganda campaign" against the city authorities, through C. C. Chappelle, whose plan Mr. Maloney rejected.

Mr. Maloney thought the Chappelle plan was formulated for the purpose of "undermining the Commission Council rather than to seek a settlement based upon a fair and equitable basis." He believed the city authorities had "piddled" long enough with the situation. The time had come, he said, when definite and concerted action should be taken by the Council. He pleaded for an organization of experts in banking, engineering, accounting and law which would be able to assist the city in its battle for reasonable rates and service.

Mayor McShane concurred in the views held by Commissioner Maloney.

Commissioner Black believed that Commissioner Maloney's suggestion was one that should have been carried out long ago. He said:

We have been going around armed with a sling shot to attack an entrenched giant. We must arm ourselves with a weapon that will dislodge the forces against us and we cannot do it without the assistance of technical men to supply the things we need.

Mr. Murphy, of the committee on finance, objected to the immediate adoption of the Maloney plan, because of the financial outlay involved.

The report was referred to the committee on finance. It will come up for discussion and consideration at the next meeting.

More Wage Cuts

Arbitrators Reduce Wages Below Offer of Company, Which Men Rejected —48-Cent Maximum

Platform employees of the Cincinnati & Dayton Traction Company will receive a maximum wage of 48 cents an hour, in the case of those employed on the interurban division, and 45 cents an hour in the case of those operating on the Hamilton city cars and the Dayton city cars, as a result of the decision of the board of arbitration agreed upon to settle the controversy between the company and Division 738 of the Amalgamated Association. The board completed its work a short time ago, with the vote of the men's representative dissenting.

STATE INDUSTRIAL COMMISSION APPOINTED THE REFEREE

The board was composed of Mahlon Gebhart, Miamisburg, representing the employees; Samuel D. Hutchins, Columbus, representing the company, and Prof. Joseph S. Myers of Ohio State University as the third arbitrator, or referee. The referee was chosen by the Ohio Industrial Commission, after the representatives of the company and men had failed to agree on a selection.

A change in the contract agreed upon names one of the federal judges of the Southern District of Ohio as the appointing power in case of disagreement over the selection of a third arbitrator in future disputes, instead of the State Industrial Commission.

The wage rate for the trainmen agreed upon by the members of the commission is as follows:

Interurban men: 44 cents an hour for the first three months; 46 cents, next nine months; 48 cents, thereafter.

Hamilton and Dayton city divisions: 41 cents an hour, first three months; 43 cents next nine months; 45 cents, thereafter.

Helpers on freight cars are to get 40 cents an hour.

Under the agreement existing before the new rate became effective, the maximum pay was 51 cents an hour. The large increase asked by the men was refused by the company, which offered as a counter proposal to continue the existing rate, under which interurban men received 51 and city men 50 cents an hour. The men refused this in turn and arbitration was agreed upon. The men would have gained had they accepted the company's counter proposal.

FIVE CITY SYSTEMS IN DAYTON

Dayton has five distinct city railway systems. In the case of the Dayton city system, whose employees are receiving a maximum of 62 cents under an arbitration award made on July 6, 1920, of which Mr. Hutchins was a member, this company has posted notices that effective on July 6 this year, the maximum will be reduced to 45 cents an hour.

One of the changes agreed upon by the arbiters in the Cincinnati & Dayton Traction Company dispute is that

changing the status of men who have been discharged by the company. The old agreement forbade rehiring after discharge, but the new code reads that "such employees shall not be re-employed in a like capacity within a period of six months."

Power House Strike to Be Arbitrated

Pending arbitration the strike of stationary engineers employed at the power houses of the Cincinnati (Ohio) Traction Company is at an end. All the men who went out on May 30 have returned to work and all inclines with the exception of the Bellevue are again in operation. The Bellevue is closed down for repairs. Under the terms of the arbitration agreement the company and the union will select representatives and should they not be able to agree on the third member within ninety days he will be named by Superior Court Judge Robert S. Marx. The traction company has designated J. A. Brett, district manager of the Westinghouse Electric Company, as its arbitrator. Business Agent C. B. Manwood, of the union said the executive board of the organization would name its representative at once. The decision of the arbitration board will be retroactive to the time the men went to work. The engineers struck against a decision of the company to reduce their wages from 90 cents to 65 or 70 cents an hour. The men demanded the continuance of the old scale of 90 cents an hour.

Wage Reduction Under Consideration

The management of the Interborough Rapid Transit Company, New York, N. Y., has taken up in friendly discussion with the officers of the organization representing the men the matter of the revision of the present working agreement some time between now and its expiration. The hope is to reach a conclusion which in the light of the financial condition of the company will be to the best interest of the employees themselves as well as of the company.

The present agreement between the management and the men expires on Jan. 1 next.

The last increases in wages were made by the company in August, 1919, at which time wages were increased 25 per cent above the rates in the working agreement covering wages then in existence, and in June, 1920, when wages were increased 10 per cent above the rate in effect on Aug. 1, 1919.

The principle behind these adjustments of wages was the increasing cost of living, the company recognizing this high cost of living as a fact which had to be considered even in the face of an existing working agreement. In this connection the company explains:

Beginning practically with the date of the last increase the reverse of this has been true, and the cost of living as shown by the same government statistics has been steadily declining for some time—a fact generally recognized and admitted.

Home Rule and Five-Cent Bills Lost

New Public Utilities Act Passed in Illinois, but Only After All Dangerous Features Were Eliminated

The so-called 5-cent fare bill fathered by Mayor Thompson of Chicago was voted down and thrown into the discard with the adjournment of the Illinois State Legislature on June 19. At the same session a new public utilities commission bill was approved which is supposed to hold out the hope of "home rule" over some of Chicago's utilities. The outcome on both these bills was a sore disappointment to Mayor Thompson and his followers and was preceded by bitter debates which stretched the session up to the legal time limit.

GOVERNOR SMALL was closely allied with the Chicago political element and used every effort to save both measures. After adjournment he issued a statement expressing his disappointment and announcing that he would call a special session so that the legislators might have time to reconsider. There was comment to the effect that Mayor Thompson would use his influence with the present commission to bring about a reduction at once in the 8-cent fare of the Chicago Surface Lines.

COMMISSION NAME CHANGED

If Governor Small approves the new utilities act the commission will be known hereafter as the Illinois Commerce Commission. Its membership will be increased from five to seven members and seven assistant commissioners. Another change in the present law will allow appeals to the Circuit Court of the local county instead of to the Circuit Court of Sangamon County only. The bill was stripped of the clause giving city councils power to initiate a referendum for home rule. This can only be attained by a petition signed by 25 per cent of the registered voters in a community. The Legislature also wiped out the section which would prevent the commission from setting aside contracts between municipalities and utility corporations.

An attempt was made to strike out the whole home rule section of the bill. This failed, but the measure was amended to provide that if home rule is established in any community rulings may be appealed to the state commission and from that body to the local Circuit Court and thence to the Supreme Court. Inasmuch as home rule can be established only over utilities entirely within the city limits, this is said to eliminate all except the surface lines and the gas company in Chicago. It is contended that the bill in its present shape is not more drastic than the existing measure.

MAYOR THOMPSON FOUGHT-THE FIGHT

The fight on Mayor Thompson's 5-cent fare bill was one of the features of the closing days of the Legislature. This bill provided that surface and elevated lines might be acquired, with the approval of the people, through the creation of a "transportation district"; that operation of the lines would be conducted by nine trustees; and that the "district" would have authority to

issue bonds for purchase of the railway properties. The Mayor suffered his most serious defeat when the 5-cent clause was stricken out. It was intended that any deficit to meet costs would be made up, by general taxation. Mayor Thompson went to Springfield to urge passage of his bills and he admitted that he would favor 4-cent, 2-cent and even 1-cent fares if the people voted for such rates. He even was quoted as saying that he would favor free street car service if the people voted for it. This roused some of the Senators to much stronger opposition.

As finally amended the bill allowed the board of trustees to determine the rates of fare and charges upon transportation systems and a referendum would be required on all bond issues. It was also provided that no community would be combined with a "transportation district" without consent of its voters. With all these amendments taking the political attractions from the bill the measure was lost by a close vote in the closing hour of the legislative session.

Railway to Run Buses

Connecticut Company Announced Plan at Bridgeport Hearing Before Public Utilities Commission

Under the recent authority granted by the State Legislature the Connecticut Company proposes to establish five motor bus routes, three in Bridgeport. This announcement was made at a hearing before the State Public Utilities Commission held at Bridgeport June 21-22, on applications for certificates of public convenience and necessity to operate motor buses in Bridgeport and vicinity after July 15 when all motor bus lines come under the jurisdiction of the Commission.

The Connecticut Company, President Storrs said, was prepared to undertake a bus service complementary to that of the electric railway with a free interchange of transfers within the city area between the buses and trolley cars.

The city of Bridgeport petitioned for the authorization of thirteen routes some of which competed with the trolley. Under the city's plan the number of buses in operation would be cut from 200 to 88. More than 500 sought permits to operate these routes, modification of which was asked in some cases. One application from the American Transit Company, a recently formed stock cor-

poration, sought the right to operate all routes as laid out. It was brought out that the city was probably 50-50 for trolleys and jitneys and would resent the loss of either.

Percy T. Litchfield, head of the city's traffic commission, represented the local Chamber of Commerce. He declared that a limited bus system was necessary in addition to the trolley service and that if the railway would meet the needs for bus lines on some routes no other permits should be given. The chamber wanted to see the trolley system get on its feet and be alive to modern conditions. In short, transportation by motor vehicle has come to stay no matter what fare may be required to support the service. If the officers of the railway took advantage of the rights they now have to operate supplemental bus service, it would be possible for them to handle the situation, but with their trolley cars alone they cannot do it since the people have experienced the advantages of the jitney service.

The company in its testimony brought out that in 1920 for the Bridgeport division operation expenses and taxes exceeded revenues by \$470,000.

No allowance is made for depreciation. In the Commission's own valuation for this division of \$8,000,000, based on 1910-1914 prices or of \$14,400,000 on 1919 prices an 8 per cent return would bring the losses up to more than a million dollars, exclusive of any allowance for depreciation. For the first four months of 1921 with service materially curtailed and the closest watch over expenditures and every possible economy, the operating expenses and taxes still exceeded the revenues by \$17,818.

For Labor Unions: A Receipt for Immortality

An editorial with this title from *America at Work*, a publication issued in St. Louis, has been reprinted in pamphlet form by Ivy L. Lee. The editorial declares that the labor union should not place so much emphasis on the possession or non-possession of a union card, but should declare its interest in "good working conditions, good wages and the highest possible standard of craftsmanship." It says that all "closed" shop organizations are despotisms, whether they are a church, university, school of medicine or labor union, and that union labor should go as far as modern churches, schools, physicians and insurance companies in placing emphasis on the end and not the means, on the aims of the organization and not on membership in the organization itself.

The pamphlet also says that mere display of power will not insure immortality. Modern men do not back down before power as such at all. They only yield respect to the foundation of power, and power in a democracy can have no permanent foundation except in service.

Byllesby Property Slightly Damaged

According to a recent statement the Arkansas Valley Railway, Light & Power Company, a Byllesby property, suffered only slight damages in the Pueblo cloudburst and flood. R. G. Hunt, assistant to the vice-president of the Byllesby Engineering & Management Corporation, was one of the first outsiders to reach the scene of the disaster. He said in part:

Our street railway during the early hours of the flood continued in service, carrying the panic stricken out of the flood district. The cars operated until it was no longer possible to operate the power plant. There were many notable instances of individual bravery. Construction Superintendent Phythian, who stuck to the power house to the last, was marooned on top of the new steel structure all night. Early next morning when the waters had subsided he attempted to wade out, and was caught in the swirl of water. After a hard battle for his life he was drawn to safety by means of a rope thrown to him.

Stockholders of the company have been assured of their investments by means of a circular letter sent out on June 14, after the property loss had been ascertained. The management states that the Pueblo plant will be in full operation in two weeks.

Evidence Piling Up Favorable to Hydro-Electric Project

Bion J. Arnold's report received further consideration from the Ontario Hydro Radial Railway Commission during the week ended May 14. Frank A. Sager, managing engineer for Mr. Arnold, gave evidence in the absence of the latter from the city.

The Toronto Suburban system, as projected, will consist of the existing lines of the Toronto Suburban Railway operating from Keele Street to Guelph, to Woodbridge and to Weston, as well as the present Davenport, Crescent and Lambton lines. Mr. Arnold suggested that the Guelph division be changed and the cars operated right into the downtown terminal in Toronto, in 1925, by constructing then a connection from Lambton to the Toronto-St. Catharines Radial at Swansea via the old belt-line route.

The traffic counts made in Toronto showed that of the total traffic carried by the street car lines in that section 48 per cent was rush-hour traffic carried in the three busy hours of the day; 6 a.m. to 8 a.m. and 5 p.m. to 6 p.m. The other 52 per cent was distributed over the remaining sixteen hours of the operating day. This showed that Toronto probably had a higher traffic peak than any other city in North America. The practice of selling eight tickets for 25 cents for rush-hour riding was wrong from a financial point.

With respect to the interurban service of the Toronto & Eastern, which it was proposed should be operated to Bowmanville, 40 miles, it was shown that the riding habit of the population in that territory would mean 1,640 passengers per day into the Toronto terminal. This estimate did not include the actual count of passengers riding between stations along the route.

Dealing with operating expenses of the whole system of hydro-radials, Mr. Sager submitted figures of fourteen radial lines in the United States showing a range of 60½ down to 32.4 cents per car mile. The hydro-radial figures for the five divisions were 28.7 cents. This difference was accounted for by the fact that the hydro system as proposed was the only one on the American continent having 300 miles of lines that embraced rapid transit, interurban, express and heavy freight services.

The Guelph Radial Railway system has been transferred to the Hydro Commission in accordance with the Order-in-Council recently passed by the Ontario Government. Manager House will be retained as the operating head by the commission.

News Notes

Little Rock Men Win.—Union employees of the Little Rock Railway & Electric Company, Little Rock, Ark., won their wage controversy from the company in an award handed down by the board of arbitrators on June 10. The vote was unanimous against a decrease in the men's present scale of from 46 to 51 cents. The award will serve as a one-year contract.

\$1,000,000 Electrification Project.—The Electric Short Line, Minneapolis to Hutchinson, Minn., is to be extended 25 miles and electrified. The estimated cost of the project is \$1,000,000. Work is expected to begin by July 1. The overhead trolley will replace the gas-electric and oil-burning locomotive. E. D. Luce, president of the company, is a member of the executive committee of the American Short Line Railway Association.

Five Cents an Hour Wage Cut.—Motormen on the lines of the Sault Ste. Marie (Mich.) Traction Company were recently informed of a wage cut of 5 cents an hour. The reduction became effective on June 1. The wage was 48 cents an hour. Manager Taylor announced that this action on the part of the company was necessary and that the recent increase in fares had not materially affected the financial condition of the company.

Trackless Trolley Under Consideration.—The trackless trolley is being considered for adoption in Grand Rapids, Mich., as a solution for the present need of extensions to existing lines of the Grand Rapids Railway. Officials of the railway do not believe that the proposed innovation will be feasible for thoroughfares which carry heavy traffic, but it is thought that many residence streets in outlying portions of the city where extensions are needed might prove ideal for the operation of such lines.

Wage Cut Rejected.—The employees of the Atlantic City & Shore Fast Line Railroad, Atlantic City, N. J., have refused to accept a proposition made to them by the management that the men take a voluntary 10 per cent reduction in wages to assist in the effort to get back to normal living conditions.

Wage Offer Rejected.—The trolley men of the State have rejected the wage offer of the Connecticut Company, which fixed a minimum of 49 cents for the beginner and a maximum of 54 cents an hour for the old-timer. It is said that by a four to one vote the local conductors and motormen at New Haven rejected the offer, which is the second one and about a nickel an hour better than the first offer, which also was rejected by a referendum vote of the men. It is believed that the matter will go to arbitration.

Wages Cut in Dayton.—It is expected that all railway properties in Dayton, Ohio, will unite in a uniform wage reduction. Managements of the Oakwood Street Railway, the Dayton, Springfield & Xenia Southern Railway and Dayton Street Railway have announced a wage cut of practically 17 cents an hour. The new scale will be 41 cents for the first three months, 43 for the next nine months and 45 cents for all over twelve months' service. The present scale is 58, 60 and 62 cents an hour. The cut is scheduled for July 6.

Wages Increased in Worcester.—An increase in wages of 3 cents an hour for trainmen went into effect on June 1 on the lines of the Worcester (Mass.) Consolidated Street Railway under a contract that terminates on Dec 31. It is said that the added expense to the company until the end of the year will be \$80,000. The new wage scale will give employees for the first three months' service with the Consolidated 58 cents an hour; for the next nine months, 63 cents an hour, and after the full year's service the men will receive 68 cents an hour.

London Workshop Cost Underestimated.—In a previous item in the ELECTRIC RAILWAY JOURNAL on the erection of workshops by the London underground electric railway companies and the London General Omnibus Company the cost of the project and the area covered were inaccurately stated. The railway shops will cover an area of 28½ acres and will cost approximately £450,000 inclusive of price of land, cost of buildings and equipment. The omnibus depot will cover 30 acres and will cost approximately £500,000 inclusive of the land, buildings and equipment.

Franchises Surrendered in Indiana.—Local franchises in six cities—South Bend, Mishawaka, Elkhart, Goshen, Laporte and Michigan City—have been surrendered by the Chicago, South Bend & Northern Indiana Railway, which made application recently to the Indiana Public Service Commission to operate under indeterminate permits. This is the second large corporation outside of Indianapolis to accept in-

determinate permits granted under the act which established the public service commission and abolished the railroad commission.

Men Accept Wage Cut.—Officials of the Southern Indiana Gas & Electric Company, Evansville, Ind., recently signed an agreement with the union for one year, calling for a reduction in wages amounting to 18 per cent. The men working on the city cars under the new agreement will receive from 36 to 43 cents an hour; the men on the inter-urban cars from 38 to 43 cents an hour and the men on the one-man cars will get from 40 to 45 cents an hour.

To Pull Together for Mutual Benefit.—The San Francisco-Oakland Terminal Railways, Oakland, Cal., has recently created a Department of Personnel "for the systematic supervision, study and improvement of the human element in organization." The new department will have as its watchwords, justice, co-operation and economy. In taking a personal interest in every employee the Committee on Personnel will know what employee should be transferred to other departments, who should be advanced, etc. The training of platform men will be one of the duties when space and equipment are available.

"Electric Railway Service" Suspends.—The Detroit (Mich.) United Railway has suspended publication of *Electric Railway Service*, established in June, 1913, and the forerunner of many similar publications issued at this time. Economies are necessary and the company being opposed to carrying advertising in the publication, "it is quite necessary that suspension follow when the revenues are not sufficient to meet expenditures." In conclusion this opinion is expressed: "We feel sure that thousands of our friends and patrons will rejoice when conditions change and a renewal of publication becomes possible."

Federal Commission to Study Waste.—A federal commission to study waste elimination in industry is proposed in a bill which has been introduced by Senator Calder. The bill is intended to continue and to amplify the survey made by the Federal Engineering Societies at the instigation of Herbert Hoover, who at that time was president of the organization. The commission is to be composed of seven commissioners to be appointed by the President, and the Secretary of Commerce is to be chairman of the commission. The final report is to be made on or before Sept. 21, 1922. The report is to cover waste in "timber, power, transportation, oil, coal, essential minerals and other basic raw materials." The commissioners are to serve without salary.

No Plans Formulated by Commission.—F. H. La Guardia, president of the Board of Aldermen, New York, N. Y., recently issued a statement in which he charged that "all promises of new lines and new extensions made when the new transit law was under discussion were empty promises not capable of being kept." This statement was

made as a result of the failure of Mr. La Guardia to exact a pledge from George McAneny, chairman of the new transit commission, that a 5-cent rate of fare would be retained on the rapid transit lines. This promise would have been reciprocated by the Board of Estimate appropriating funds for the commission. Mr. McAneny's letter to Mr. La Guardia stated that no conclusion had been reached in relation to the commission's plan.

Wages Remain the Same.—A wage settlement for the year ending May 31, 1922, has recently been effected directly between the Asheville Power & Light Company, Asheville, N. C., and its trainmen on the basis of the present scale running from 48 to 56 cents an hour. The agreement is subject to termination upon the giving of sixty days' notice by either party. The arbitration board appointed about a year ago to determine upon a scale of wages to be paid the trainmen of the company, for the year ended May 31, 1921, fixed a wage scale of 48 cents an hour for the first six months, 49 for the second six months, 50 for the third six months, and 56 cents an hour thereafter. This year the trainmen submitted to the company an agreement calling for a wage scale running from 54 to 60 cents an hour.

\$500,000 to Aid Industry.—With the passage of the second deficiency bill by the Senate, the Department of Commerce is certain to receive the \$500,000 asked by Secretary Hoover for the specific purpose of aiding industry. Of the amount, \$250,000 will be expended in an effort to encourage foreign trade. The remainder will be utilized in various types of investigation and research looking to simplification, standardization and improvement in industrial practices and devices. The detailed plans for expending this money in the most effective way possible now are being worked out. As this is written, the bill still is in conference, but no great amount of difficulty is anticipated in harmonizing the differences between the bill as passed by the House and as it finally emerged from the Senate. That the President will sign the bill is a foregone conclusion.

New Franchise Urged in Houston.—Luke C. Bradley, vice-president and general manager of the Houston (Tex.) Electric Company, has notified Mayor Oscar F. Holcombe and members of the City Council that his company is ready to open negotiations with the City Council looking to the granting of a new railway franchise. The company has been operating under a temporary arrangement since it won its fight in Federal court for an increased fare. Negotiations opened several times since the company's victory in court have resulted in a deadlock each time, and the company has continued to operate under the court's order. Mayor Holcombe and members of the City Council have declared that any new franchise must include the expenditure of large sums for improvements, extensions and better-

ments. The fate of the jitneys in Houston also is a point that will be settled in the franchise negotiations.

Public Service Men Accept Cut.—The trainmen on the Public Service Railway of New Jersey, Newark, have voted to accept a reduction in wages of approximately 10 per cent. The new scale will be 46, 48 and 50 cents an hour, with 5 cents additional to operators of one-man cars. This is the scale fixed by the War Labor Board in 1919. The present rates are 50, 53 and 55 cents an hour. The company wanted to revert to the rates of 41, 43 and 45 cents an hour. A two-year agreement containing this scale was signed on June 22 by the joint conference board of the company and of the Amalgamated Association. The men had previously refused to accept a proposed reduction of 20 per cent. The new scale will go into effect on Aug. 1. Every employee of the company now a member of the Amalgamated Association will be bound by the terms of the new contract. New men will be taken on irrespective of any union affiliations.

Fate of Railway in Hands of City.—Unless the taxpayers of Brunswick, Ga., are in favor of buying the City & Suburban Street Railway, which operates in that city, and maintaining it as a going concern the threatened junking of the line will take place. The bondholders foreclosed their mortgage on the property recently. At a conference on May 11 between the Board of City Commissioners and representatives of the Board of Trade a proposal was made by the company that the lines be purchased and operated by the city government. In its statement the company suggests an extension of the line to Arco and expresses the belief that such extension would put the line on a paying basis if properly managed and operated. The property includes 8½ miles of track with the necessary wire, poles, etc., five motor cars and six trailers. It is believed that a questionnaire will be submitted to the voters in regard to the purchase of the line by the city government.

Programs of Meetings

Amalgamated Association of Street & Electric Railway Employees

The seventeenth convention of the Amalgamated Association of Street & Electric Railway Employees of America will be held on Sept. 12 at Auditorium-Armory, Atlanta, Ga. The headquarters will be at the Ansley Hotel.

Society for the Promotion of Engineering Education

The Twenty-Ninth Annual Meeting of the Society for the Promotion of Engineering Education will be held at Yale University June 28-July 1, 1921. The meetings will be held in college buildings, at the Lawn Club and at the Country Club.

Financial and Corporate

Wheeling Roads Sold

Controlling Interest in City Railway and Affiliated Lines Secured by Providence Bankers

Sartorius & Company, Providence, R. I., have purchased a controlling interest in the West Virginia Utilities Company, which controls the Wheeling Public Service Company and the City Railway. The management of these properties has for some time been under the direction of the W. S. Barstow Management Corporation, which has been represented locally by J. D. Whittemore. At a recent meeting of the board of directors it was determined to continue the present management for the time being. The directors instructed Mr. Whittemore to co-operate in every way with M. R. Stern, the engineer representing Sartorius & Company.

Mr. Stern is now manager for Sartorius & Company at Chattanooga, Tenn., for the Public Light & Power Company. He expects to divide his time between Wheeling and Morgantown. In commenting on the situation in Wheeling Mr. Stern said:

The situation in Wheeling presents a number of perplexing problems. I can't say now, off hand, what will finally be done in respect to some of these difficulties, but the new owners of the Wheeling properties are going to do everything in their power to keep these roads going. The competition of the bus lines makes the difficulties of the railways greater.

It would be very unfortunate, indeed, for the residents of that fine section Out-the-Pike and on through your fine valley to West Alexander if it should become impossible to operate the road longer.

According to Mr. Stern the new owners of these roads would like to see the properties held intact, but with the problems confronting the roads, their future is rather uncertain. The proposal to abandon operation of the City Railway will be dropped for the present, although the change in ownership does not necessarily change the status of that problem. Mr. Stern said further that as regards Wheeling, no change in the rates of fare or in the operation methods is contemplated.

Large Budget for M. O. Construction

According to the Detroit *Free Press* \$1,000,000 will be added this year to the upkeep of the Department of Public Works for the construction of the municipal railway in Detroit. This is another example of expenditure not charged to the railway property on account of municipal operation. In various sections of the city repaving and resurfacing have been undertaken in this construction. To meet the cost of this resurfacing Mayor Couzens requested the Council to add another \$1,000,000 to the budget. No part of the money will be taken from the

\$15,000,000 voted by the people for a municipal railway system. The *Free Press* says:

The department of public works is not the only department of the city which was forced to add to its budget in order to shoulder part of the expense of the municipal operation system. The public lighting department, the water board and the forestry department have all been called upon to make large expenditures in order that work on municipally operated lines should not all be charged against the \$15,000,000 appropriation.

The commission and the Mayor have announced that the new lines are being constructed more cheaply than railway lines ever were constructed in any other American city. The actual cost to the street railway commission is about \$62,000 per mile, according to Ross Schram, the secretary.

Municipal Railway Bonds Taken

A new syndicate, composed of the Guaranty Company, the National City Company, Bankers' Trust Company, Harris, Forbes & Company, Eastman, Dillon & Company, E. H. Rollins & Sons, all of New York, and Keane, Higbie & Company and the Detroit Trust Company, of Detroit, has purchased of the city of Detroit \$2,000,000 bonds; \$1,000,000 of 5½s, due May, 1949, and \$1,000,000 of 6s, due June, 1947. The syndicate has also taken over the small remaining balance of bonds in the previous syndicate and is offering the 6 per cent bonds, maturing in various amounts from 1927 to 1951, on a 5.60 basis, and the 5½ per cent bonds, maturing from 1931 to 1948, at par.

The \$2,000,000 city of Detroit 5½s and 6s are issued by the city for street railway purposes, and are the bonds recently validated by the Supreme Court of the State of Michigan. The decision of the court handed down on June 6 referred to a similar suit in the Federal courts, in which, upon appeal, the Supreme Court of the United States held that the proceedings to authorize the municipal railway to issue bonds were regularly taken. The Michigan Supreme Court also went on to uphold the validity of the special election held by the city on April 5, 1920, at which the voters by a very decided majority authorized the bond issue and municipal street railway program, and upheld the power of the city to issue the bonds, assume the obligation and to "convert money raised by taxation to the construction of its street railway system."

The bankers explain that this action of the court effectually disposes of any question as to the validity of the bonds and establishes their investment position.

Dividends Paid in Scrip

Holding Company with Large Oil Interests Conserving Its Resources—Shares Sell Down

Dividends of the Cities Service Company, New York, N. Y., are for the present to be paid in scrip instead of cash. This decision was made by the directors on June 15. No maturity date has been set for the scrip. Moreover, the scrip does not bear interest. In case of stockholders forced to sell their scrip, it is said that Henry L. Doherty, fiscal agents for the Cities Service Company, have planned a syndicate to take over the scrip at the market. The company has outstanding with the public more than \$77,000,000 of cumulative preferred stock, more than \$3,000,000 of ordinary preferred stock and \$45,000,000 of common stock. In addition there are close to \$30,000,000 of debentures outstanding.

MOST EARNINGS FROM OIL

While the company controls electric and railway properties, its principal source of income is derived from its oil holdings and leases. The gross earnings for 1920 were \$118,000,000, the net after preferred dividends were paid being more than \$18,000,000.

A statement by the Cities Service Company to stockholders gives at length the memorandum submitted by H. L. Doherty, president of the company, to the directors. He said that his recommendation for the suspension of the dividends had been reached after numerous conferences with the most notable oil men. Nearly all agreed that the present excessive production of oil over the demand could not last long, and that a period of shortage was in prospect. He said that by the decisive action at this time in suspending the dividends the directors would be able greatly to increase the value of the company's assets, resume cash and stock dividends at an early date, with the payment of all scrip issued for dividends, and be able again "to reward our stockholders in a handsome way for having accepted a change from our present dividend policy to one wherein we will issue only scrip."

The effect of this action on the stock was greatly to depress all the various issues, although they necessarily suffered in the general decline which has recently been in evidence. Cities Service common has sold down to about 130 from a high of 259 last year.

Commission Approves Sale.—The Public Utility Commission of New Jersey has approved the application of the Five-Mile Beach Electric Railway, Wildwood, N. J., for the sale of a plot of land in Wildwood, N. J., for a consideration of \$7,500. Approval was also granted for the abandonment of tracks on what is known as the loop at Wildwood Crest. Need for the loop has disappeared since the introduction of double tracking, it was testified.

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-602, b to A-614, with certain omissions. Another installment 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-602, b). What is the correct accounting for the cost and maintenance of smokestacks erected at power houses?

A. The cost of smokestacks which are not permanent as to position but are attached to and are part of the boilers shall be charged to account 542, "Power plant equipment." If they are permanent in position and will remain as part of the building structure in case the other equipment is removed, account 539, "Power plant buildings," shall be debited. Maintenance shall in each case be charged accordingly.

Q. (A-603). Paving assessments are paid in installments, each payment covering one installment and the interest due on the deferred payment. What is the proper accounting?

A. If the cost of property assessed is carried in account 401, "Road and equipment," the proportion representing the principal of the assessment shall be debited to account 511, "Paving," or to account 10, "Paving," depending on whether the assessment is for installation of new paving or the improvement of old paving, or for pavement maintenance. If the cost of the property assessed is carried in account 404, "Miscellaneous physical property," the proportion representing the principal of the assessment, if for new paving, or the improvement of old paving, shall be debited to account 404, and if for pavement maintenance, to an account includible under accounts 205, "Net income from miscellaneous physical property," or 219, "Net loss on miscellaneous physical property," as may be appropriate. The proportion of each payment which represents interest shall be charged to account 221, "Interest on unfunded debt." (See Case 267, Accounting Bulletin 14.)

Q. (A-604). To what account should be charged the pay of employees engaged in directing or overseeing "safety-first" and "prevention of accidents" work?

A. The pay of such employees shall be charged to accounts 1, "Superintendence of way and structures," 29, "Superintendence of equipment," 45, "Superintendence of power," or 63, "Superintendence of transportation," depending on the class of work upon

which they are principally engaged, except that the pay of employees or others engaged exclusively in the general promotion of "safety-first" methods among the public shall be charged to account 89, "Miscellaneous general expenses."

Q. (A-605). To what account should be charged the cost of loading, hauling, and unloading steam locomotive cinders accumulated at cinder pits and other places near shops?

A. The cost of loading shall be charged to account 75, "Operation of steam locomotives." The cost of hauling and unloading shall be charged to the appropriate maintenance, road or other account depending on the use made of them. If cinders are not used for any purpose the entire cost of removal shall be charged to account 75. (See Cases 166 and 289, Accounting Bulletin 14.)

Q. (A-606). To what account should be charged:

(a) The pay of cashiers at elevated and subway stations.

(b) The pay of chief cashier and assistants engaged in supervising the station cashiers.

A. (a) Pay of station cashiers is chargeable to account 68, "Station employees."

(b) Pay of chief cashier, if he is considered a general officer, is chargeable to account 83, "Salaries and expenses of general officers." If chief cashier is employed in the general office but is not considered a general officer, his pay is chargeable to account 84, "Salaries and expenses of general office clerks," as is also the pay of his clerical assistants.

Q. (A-607). What account should be charged with the cost of rebuilding a work car wrecked while it was being used for converting a trestle to an embankment?

A. If the wreck was directly attributed to work the cost of which is chargeable to account 504, "Grading," car repair costs shall be assigned to the same account, but if attributable to work chargeable as maintenance or was caused by transportation operations, repairs shall be charged to account 32, "Service equipment."

Q. (A-608). A carrier pays a power company a fixed rate per kilowatt hour for power used, and, in addition, a percentage of the cost of a transmission line built and maintained by the power company to serve the carrier. How should the payments be charged?

A. Assuming that the ownership of the transmission line remains with the power company, the entire amount paid

by the carrier shall be debited to account 59, "Power purchased."

Q. (A-610). A carrier installs a spur track in a street not previously occupied by tracks. How should it account for the cost of removing pavement preliminary to track construction, and the cost of replacing pavement after track construction?

A. The cost of removing paving shall be charged to account 504, "Grading," and the cost of the new paving to account 511, "Paving."

Q. (A-611) When a carrier sets up a depreciation reserve on way and structures, should it base its depreciation charges solely on the amounts in accounts representing specific property, such as account 506, "Ties," and 511, "Paving," or on amounts in all accounts for way and structures?

A. As the charges to operating expenses should represent the actual current loss from depreciation, they shall be based on the accounts which include depreciable property. It is required that the records shall be such that the depreciation accrued with respect to any particular unit of property may be readily determined and cleared from the reserve at the time such unit is withdrawn from service.

Q. (A-612) A carrier receives rental from property used by another carrier, the payment covering factors of rent, maintenance, and operation. Should the entire amount be credited to revenue account 115, "Rent of tracks and facilities," in accordance with the text of that account, or should that portion representing the cost of maintenance and operation be credited to primary operating expense accounts as indicated in Cases 332 and 403 of Accounting Bulletin 14?

A. Where the payment is for rent of tracks, terminals, or bridges which are jointly used the full amount shall be credited to the appropriate rent account regardless of the basis used in determining the amount of the payment, but where the payment covers only a proportion of the cost of maintenance and operation of property which is jointly used and there is no element of rent involved, the amount shall be credited to the appropriate primary maintenance and transportation expense accounts.

Q. (A-613) To what account should be charged cost of publishing notices of fare increases, such publications being prescribed by city ordinance?

A. To account 80, "Advertising."

Q. (A-614) A carrier has established a department, under the care of a superintendent, for the operation of non-revenue equipment. How should the department expense be distributed?

A. The pay and traveling expenses of the superintendent shall be charged to account 83, "Salaries and expenses of general officers," and the other general expenses to account 84, "Salaries and expenses of general office clerks," 85, "General office supplies and expenses," and to account 94, "Stationery and printing," as may be appropriate.

Belgian Light Railways Being Rehabilitated

The report of the National Light Railway of Belgium (Société Nationale des Chemins de Fer Vicinaux) shows that the destruction of track caused during the German invasion is rapidly being repaired. During the past year 647 km. of track which had been demolished was again made ready for service and on Dec. 31, 1920, 3,388 km. was in operation. About 600 km. of track remained to be rehabilitated. During 1920 the company purchased 71,000 (metric) tons of rails and 1,897,645 ties. The Germans took from the property 427 steam locomotives, 14 electric motor cars, and 116 electric trail cars, but the greater part of this material has been recovered. The motive power used is both steam and electric, divided as follows:

Steam power on.....	3,852.11 km.
Electric power on.....	359.29 km.
Mixed service of steam and electric.....	84.45 km.
Total of lines opened for public service.....	4,295.85 km.

The extent of track on which electric cars are used, measured in miles, is 225. The service given throughout the system is a light railway service and some city tramway lines are included in the system. Altogether in its electrical equipment the company has 568 electric motor cars, nine gasoline-electric motor cars, 286 closed electric trailers, and 246 open electric trailers. At the end of the year sixty-nine electric motor cars were under order. The receipts during 1920 from all sources were Fr. 66,934,551, and the expenses Fr. 65,246,002.

Change Suggested in Mexican Financial Plans

A report of the London committee on the financial situation of Mexican Light & Power and the Mexican Tramways group of companies announces an issue of \$12,000,000 of 6 per cent debentures.

No interest has been paid on the various issues of bonds and on funded debts for over six years, and the aggregate of funds now available falls far short of the amount required to discharge the interest, quite apart from the principal of the unfunded debts, which are long overdue. The aggregate debt of the associated companies, as at the end of December last, was more than \$8,897,000. No dividend has been paid since November, 1913, on the \$6,000,000 of preference shares of the Light & Power company. The report says that the default of the associated companies is a direct consequence of the conditions prevailing in Mexico since 1911.

An outline of the provisional agreement gives in considerable detail plans for payment of a number of coupons forthwith, further payments by the end of June, 1922, and others a year later, but sinking fund payments to

be resumed in 1928 with all payments to that date to be waived. Bondholders are urged to accept the proposed plans as "being the best arrangement that can be effected in their interests."

The report says that although the position in Mexico remains difficult, the outlook is certainly more hopeful than it was.

Interurban Dissolution Petition Presented

A petition for the dissolution of the Ohio Electric Railway system was filed in the Federal Court at Toledo, Ohio, during the week ended June 18 by Receiver B. J. Jones, Columbus, who asks permission to surrender the leases of several of the subsidiary lines in the system.

The receiver alleges in the petition that the Indiana, Columbus & Eastern Traction Company, the Columbus, Newark & Zanesville Traction Company, and the Fort Wayne, Van Wert & Lima Traction Company, do not collect enough revenue now to pay the rental required of the Ohio Electric Railway.

The Ohio Electric wants allowance in stock for the cars used on these lines which it has purchased during its operation of the lines.

Mr. Jones says he believes he can make the Ohio Electric itself pay its way if it is released from the burdens of the other lines.

Judge John M. Killits has not made an order in the case.

Financial News Notes

Georgia Property to Be Sold.—The property and equipment of the City & Suburban Railway, Brunswick, Ga., will be sold on July 5 as a going concern. If a satisfactory bid is not received it is likely that the property will be sold as junk.

Traffic Decreases in Cincinnati.—Higher fares and industrial conditions in general have greatly affected the traffic handled by the Cincinnati (Ohio) Traction Company. During the month of May, 1921, there was a daily decrease of 39,963 passengers compared with May a year ago. The total decrease in revenue passengers for the month was 1,238,900.

Wants to Abandon Service.—The Union Railway, New York, N. Y., has applied to the Transit Commission for permission to abandon service on Jerome Avenue, Bronx. S. W. Huff, president of the company, said in the petition that the receipts of the property do not warrant continued operation; that the opening of the elevated part of the Lexington Avenue rapid transit line on Jerome Avenue had

taken most of the traffic in that direction. A public hearing on the abandonment will be held on July 21.

\$10,000,000 for Purchase and Improvements.—Civic Finance Commissioner Ross of Toronto, Ont., has been authorized by a by-law passed by the City Council to issue debentures for \$10,000,000. The Transportation Commission, which is preparing for the city to take over the Toronto Railway on Sept. 1, asked for \$7,000,000 and part of the balance of the \$10,000,000 will be used in the rehabilitation and operation of the system. In asking the Council for this amount, Commissioner Ross said he proposed to cancel some \$2,026,000 of the issue authorized last February.

More Eastern Massachusetts Lines to Stop.—The Mayor of Woburn, Mass., and the Selectmen of Burlington and Billerica were notified on June 4 by Homer Loring, chairman of the trustees of the Eastern Massachusetts Street Railway, that the Woburn-Billerica line would be posted on June 6, for discontinuance, to be effective on and after June 13. The company says it is compelled to take this action because of the failure of those three communities to take the necessary steps to eliminate jitney competition. The proposed change will cut off all connection between Woburn and Lowell and intermediate places.

Stockholders Not Liable.—Stockholders of the Cincinnati, Dayton & Toledo Traction Company, Hamilton, Ohio, are not liable to assessment in the suit by Dwight S. Marfield, according to an opinion handed down by Judge Stanley C. Roettinger in the Hamilton County Common Pleas Court, Cincinnati. The suit sought to hold all stockholders of the company and named more defendants than any other action ever filed in the local courts. That there was no contractual relation that would put this case within the provisions of the Federal constitution, Judge Roettinger said was the basis of his decision. Dwight Marfield, representing creditors of the company, sought in the suit to make former stockholders liable for \$500,000 of debts.

Defers Dividend Payment.—The board of directors of the Indianapolis (Ind.) Street Railway at a recent meeting voted to defer the payment of the usual quarterly dividend on the preferred stock of the company, due on June 1. Dr. Henry Jameson, president of the board, explained that the directors felt that "the condition of the company is such that payment of this dividend should be passed." The dividend due on June 1 was 1½ per cent on \$5,000,000 of preferred stock, totaling \$75,000. This is the first time the company has passed a dividend on this stock, Dr. Jameson said. Payment of dividends on certain stock of the company was waived in the reorganization of the Indianapolis Street Railway and the Indianapolis Traction & Terminal Company on the order of the Public Service Commission in 1919.

Traffic and Transportation

Ottumwa Case Unusual

Two Years of Litigation Over the Matter of Fares Leaves Railway Where It Started

The net result of the litigation between the Ottumwa Railway & Light Company, Ottumwa, Iowa, and the city over the matter of fares is that the company finds itself under the recent decision of the Supreme Court of Iowa about where it started a little more than two years ago. This decision was referred to in the *ELECTRIC RAILWAY JOURNAL* for April 16, page 751.

The following summary is from a statement prepared by Cummins, Roemer & Flynn, attorneys, Chicago.

By a provision in its franchise the Ottumwa Railway & Light Company was limited to a maximum rate of 5 cents for street railway fares. In December, 1918, the City Council passed a resolution authorizing the increase of the fare until after the signing of the treaty of peace with Germany, the new rate to be 6 cents. This rate was put into effect, but about April 1, 1919, the City Council rescinded the resolution and attempted to prohibit the company from charging more than 5 cents.

Thereupon suit was brought. A temporary injunction was granted by the trial court which upon motion of the city was dissolved. From the order dissolving the temporary injunction the company appealed to the Supreme Court, where the question discussed was the validity of the franchise limitation of fare in the first instance, it being the contention of the company that the Legislature had never delegated to the city the state function of fixing rates and that therefore the franchise contract limiting the fare to 5 cents was void for want of power in the city to make it. The Supreme Court of Iowa held against this contention in an opinion dated July 10, 1919.

Following this ruling the company filed a petition for a rehearing. This rehearing was granted. After reargument and resubmission of the case a second opinion was handed down on Aug. 9, 1920, in which the contention of the company was upheld that the city was without authority under the statute to make a rate by contract with the railway and that the contract in that regard was void.

Both opinions upheld the broad principle that a city could not contract for rates of a public utility unless its authority so to do had been expressly conferred by the State Legislature, the fixing of rates being a matter of state control, but in the former opinion by a unique theory the judge who wrote the opinion read into the statute the

authority demanded by the general principle laid down. In doing this he overlooked a governing decision by the court and hence the same judge wrote the second opinion above referred to.

When the second opinion was handed down the company naturally concluded that the litigation was ended. The city, however, through its counsel filed a petition for rehearing. This rehearing was granted by the court and the case was set down for argument the third time in April, 1921. In the meantime the personnel of the Iowa court had changed considerably as a result of the election in the fall and the death of one of its members. Before the time came for submission the company asked leave to dismiss the appeal. This was granted by the court with a memorandum to the effect that both the opinions rendered in the case and above referred to were withdrawn.

With a view to determining what would be the proper fare since the reduction in wages, a statement has been prepared by accountants for the city which shows that from June 9, 1920, to March 31, 1921, 28 per cent of rendered in the case were withdrawn.

Omaha Company Wants Skip Stops Continued

The "skip-stop" system, which has been used at Omaha, Neb., since Oct. 1, 1918, was defended before the State Railway Commission in Omaha recently by R. A. Leussler, vice-president and general manager of the Omaha & Council Bluffs Street Railway. The hearing was in response to a petition from patrons who urged the commission to order the company to restore the old system of stopping at every intersection. Cars are stopped at every downtown intersection, and beyond this district the stopping points are indicated on poles by black lettering on a field of yellow.

Mr. Leussler testified that a test made for the year 1919 showed that the operating expenses were reduced \$56,663 by reason of the skip stop, and of that amount \$16,097 was a saving in coal expense. He told the commission that the new system yielded the equivalent of 13,444 additional car hours per year, and that the average speed of cars had been increased from 9.3 to 9.4 miles per hour. He estimated that it would cost \$65,000 more this year to return to the old plan, with no appreciable enhancement of the service.

More rapid and comfortable service and the lessening of accidents were some of the arguments offered in favor of the skip stop. The commission will take the matter under advisement.

Ten-Cent Fare Refused

New Jersey Utility Commission Follows Precedent Established in Public Service Railway Ruling

Eight cents will be the fare in Trenton, N. J., on and after June 27. The present 1-cent transfers will be continued. This was the ruling made on June 20 by the State Board of Public Utility Commissioners on the application of the Trenton & Mercer County Traction Company for a 10-cent fare.

The board held that the present 7-cent rate was "insufficient and unreasonable," but it was not satisfied that a 10-cent rate was just and reasonable and refused to approve that rate.

The board estimated that the increased fare of 1 cent will give a return to the company of nearly 7 per cent on the highest estimate of the value of the company's property and approximately 8 per cent on the lowest estimate.

INCREASE FROM HIGHER FARE \$185,000

The increased revenues under the new rate, the board calculated, will be approximately \$195,000 additional, and deducting about \$10,000 for the extra franchise tax which must be paid on the increased gross receipts, the total increase from the higher fare will be \$185,000. This added to \$158,000, the prospective net revenue of the company from the 7-cent fare, would total \$343,000 the entire net income.

If a 10-cent fare should be charged and the number of passengers estimated by the company should be carried, the board pointed out, the return would be more than the company was fairly entitled to. On the other hand, however, if the result of such fare should materially curtail the use of the trolleys, the value of the service would be impaired and lessened to the public and the company might not obtain more revenue than would accrue under an 8-cent fare.

The Board of Public Utility Commissioners took into consideration not only the Ford, Bacon & Davis report, but also the valuation heretofore fixed by the board in its report of Dec. 13, 1915, and Dec. 26, 1919. The valuation in the latter appraisal was \$3,918,011, including working capital of \$100,000.

VARIOUS APPRAISALS CONSIDERED BY BOARD

The appraisal of 1915 totaled \$4,254,657, while the Ford, Bacon & Davis appraisal based upon pre-war costs was \$4,334,192. In addition there was a valuation of \$4,875,000 made by J. G. White & Company in a former proceeding, in which war time prices were recognized. The Ford, Bacon & Davis report, the board said, however, expressed a conclusion, not based upon actual costs, that the value of the property taking into consideration pre-war prices, war prices and post-war prices, would be in the neighborhood of \$5,000,000. The board stated that due consideration was given to all these appraisals.

Jitney Procedure Announced

New Jersey Commission Lays Down General Conditions Under Which It Will Grant Permits

The State Public Utilities Commission of New Jersey in a recent decision announces that jitney service is accepted by the board as a legislative authorized method of transportation, enjoying the same sanction of law with electric railways. In all future applications for licenses by jitney operators, the board announced it will proceed on the theory that the Legislature deemed jitney service proper in that it refused to curtail the use of such transportation and because it decided to give jitanes the authority and sanction of law in the same manner as any other system of transportation. The board held, however, that municipal licenses granted must have the approval of the commission before they are valid. Attempts to operate under municipal licenses, without the board's approval, are illegal. The Public Service Railway will probably appeal to the Supreme Court for a review of the decision.

The board's finding in part is as follows:

There are, therefore, in many cities of the state two systems of street transportation: the electric railway and the jitney, recognized by and enjoying the equal sanction of the law. Indeed, if either system can be said to be favored by the Legislature it would seem to be the jitney because while the Legislature has placed all street railways under the jurisdiction of this board it has expressly refused to place jitanes licensed before March 15 of this year and operated over their April 6 routes, by limiting its power of regulation solely to such as should be licensed after March 15.

The board granted permission to C. A. Becker to operate a bus line on the Newark-West Orange line and at the same time refused to approve twenty-six applications for licenses granted by Hoboken to operate on Washington Street between Fourteenth and the Hudson and Manhattan Tube tunnel, a distance of approximately a mile. In denying the Hoboken license the board said:

We are of the opinion the necessity does not require additional jitney service as the same will not add to the comfort and convenience of the riders, but on the contrary will add to the inconvenience of others who have to use the streets or cross the same.

There are 125 jitanes in operation on this Hoboken route.

The commission also announced that because the Atlantic Coast Electric Railway operating in Asbury Park and other seashore towns has recently materially improved its service it would issue no licenses for jitanes to run parallel with the trolley lines.

Bonus Plan for Trainmen Abandoned

The Dallas (Tex.) Railway has abandoned its plan of bonus pay for trainmen, as it did not prove satisfactory, according to Richard Meriwether, vice-president and general manager, who inaugurated the scheme as an inducement to careful operation. The scheme of reward provided that a monthly bonus of 2 cents an hour for all time worked was to be paid to motormen if they

were free from any accident during the month. The conductor received a corresponding amount if his record was clear from any complaint arising out of his contact with the public.

The plan was installed early in 1920 and was continued during a large part of the year. It followed an earlier plan whereby the company divided any saving in the cost of accident claims under 4.5 per cent of the gross receipts, in the proportion of 75 per cent to the men and 25 per cent to the company. This reward was paid only at the end of the year and was distributed among the men according to the number of hours' work they had put in during the year. This did not prove to stimulate any great improvement in the number of accidents, and it was abandoned for the plan of monthly payment of a fixed amount, also abandoned.

Dallas Asks for Continuance of Six-Cent Rate

The Dallas (Tex.) Railway, having lost its fight for a 7-cent fare, has filed with the City Commission an application for a continuance of the 6-cent fare for another year. The 6-cent fare was granted on June 25, 1920, for a period of one year, with a proviso that if the company's finances were in such shape at the end of that period that it could not operate on a 5-cent fare and show earnings of 7 per cent as provided in the franchise, the 6-cent fare would be continued for another year at the request of the company. The City Commission is expected to approve the application before June 25 so that the company can continue on the 6-cent fare basis without interruption.

The application of the company for a continuance of the 6-cent fare represents that the company can not reduce fares to 5 cents at this time and continue to operate and maintain the present standard of service. It is set forth that the present 6-cent fare was granted by the City Commission as a relief measure during negotiations for a service-at-cost franchise, but that such negotiations were called off without material result having been obtained. The traction company then sought a 7-cent fare on the ground that a 7-cent fare charge was necessary in order that a return of 7 per cent on the agreed valuation might be shown. The application for a 7-cent fare was denied by the City Commission on May 2, 1921.

Richard Meriwether, vice-president and general manager, who signed the application of the traction company, declares that unless there is a further reduction in operating costs or unless the company is relieved of certain burdens now imposed on it by the city, such as bearing the cost of paving between its tracks, officials feel that they will not be able to keep pace with the growing requirements of Dallas. He says the company probably will continue to show its authorized return of 7 per cent but that it will not be able to rehabilitate its credit.

Fares to Be Reduced

Cincinnati, by Deferring Certain Franchise Payments, Will Benefit Almost Immediately

Amendments to the ordinance governing the operation of the Cincinnati (Ohio) Traction Company were passed during the week ended June 18 by the City Council, assuring the public of a decrease in fares on Aug. 1 and Nov. 1 of this year. The fares will be reduced one-half cent on each of the dates mentioned. The amendments were passed by twenty-seven votes to three.

The session of Council at which the amendments were adopted was marked by frequent squabbles arising over the proposed action of Council in passing the amended ordinance. Several Councilmen who voiced bitter opposition to the new plan at a public hearing several days prior again took the floor against the measure.

Before the amended ordinance was voted on, Saul Zielonka, City Solicitor, explained the workings of the ordinance, showing how the amendments will effect a great saving. After Mayor John Galvin signed the ordinance he issued a brief statement saying that he did so because he wanted fares to come down as soon as possible.

A letter of opposition to the new plan sent to the Council committee on street railways by the Chamber of Commerce was ordered received and filed.

William Jerome Kuertz, Director of Street Railways, said that the new ordinance would pave the way to lower fares with the help of a readjustment of economic conditions.

The ordinance is entitled as follows:

To provide for the reduction of the cost of carrying passengers on the street railway system of Cincinnati by the suspension of certain payments and accruals provided to be made by Ordinance No. 253-1918 of the City of Cincinnati, and to provide a reduced rate of fare for school children in said city.

The amendments to the original service-at-cost grant have been explained by Mr. Kuertz. He says that the savings made through wage reductions, lower coal prices and the new power contract with the Union Gas & Electric Company in September would not be noticeable in reduced fares for several years under the present franchise. He pointed out that the Cincinnati Traction Company has been unable to pay its accumulated deficits and scarcely has earned enough for its capital charges. It was contended by him that the proposed ordinance provided a change which would permit the public to get the immediate benefits of present reductions in operating costs without suffering any loss of franchise tax, but merely deferring that obligation.

Line Resumed and Fare Cut.—The Revere Beach prepayment loop of the Eastern Massachusetts Street Railway, opposite the State Bath House, Boston, Mass., has been reopened for the summer season. The fare between Scollay Square and Revere Beach has been reduced from 15 to 10 cents on the Bay State lines by way of Chelsea.

Seven Cents Desired

Richmond Railway Wants This Rate Pending Permanent Franchise Settlement

In support of the request of the Virginia Railway & Power Company for an increased fare in Richmond from 6 to 7 cents, President Thomas S. Wheelwright has given to the business organizations of the city a statement of the company's affairs showing that there are held by Richmond people 22,284 of the 85,000 shares of preferred stock, or more than 26 per cent, and 35,099 shares of the 120,000 shares of common stock, or 29 per cent.

The historic value of the Richmond street railway property made by Stone & Webster, that is to say, money actually invested, plus interest, less any returns paid to investors in the past 25 years, amounts to... \$20,249,400
The present value of the Richmond street railway property now in the service of the public, according to the inventory and appraisal of Stone & Webster, is 12,488,841

Showing an actual shrinkage in value of \$7,760,559
The securities allotted to the Richmond street railways on the basis of its present value are as follows:
Bonds \$6,725,366
Preferred stock 2,671,800
Common stock 3,317,708

Total \$12,714,874
The interest on these bonds at 5 per cent and 1 per cent sinking fund amount to..... \$403,522
Under the 6-cent fare the company contends it is now earning only 1.3 per cent, or at the rate of..... 86,959

Leaving a deficit on account of bond interest of..... \$316,563

In his statement, Mr. Wheelwright says:

We estimate that allowing for the actual falling-off in travel we will haul about 40,000,000 revenue passengers under the 7-cent fare which would give a gross increase in revenue of \$400,000, 10 per cent of which will have to be paid to the city as a franchise or license tax, leaving an estimated balance of \$360,000, from which will have to be deducted the difference between the 7-cent fare and school ticket fares at 2½ cents, which, based on last year's figures, will amount to \$45,000, leaving a net estimated balance of \$315,000.

Hence you will see that if the 7-cent fare is granted it is only an emergency measure pending the working out of a franchise which will recognize the value of the property used in the railway service and fix such fares from time to time as will insure the integrity of the investment, thereby securing a basis for credit upon which further capital investment may be obtained.

Bus Measure Upheld

The constitutionality of Toledo's bus regulatory ordinance has been upheld by Common Pleas Judge Curtice Johnson following arguments by bus owners and the city attorneys.

The temporary injunction against the enforcement of the ordinance will stand for a few days, however, to allow an appeal to be taken before the County Appellate Court. It is believed that this appeal will be heard soon so that the ordinance may be enforced if upheld.

William Powlesland, bus owner, who brought the suit against the city, claims that the bonds required make operation of buses prohibitive. At law it was claimed that the ordinance was

invalid because it contained more than one subject matter.

"The ordinance, I find," declared Judge Johnson, "contains but one subject matter, that of the regulation of buses."

It is said that the buses have been taking away approximately \$700 a day from the railway by operating on the best paying lines at peak hours and for short hauls only.

Stage Lines Cannot Give Local Service

Operative rights of automobile transportation companies engaged in business before the regulatory statute of May, 1917, are announced in a decision by the California State Railroad Commission of June 10, 1921.

The commission holds the right of regulation rests in the commission, and extensions of service are subject to permit. This applies particularly to the inauguration of local service. This decision was rendered in the case of the Crown Stages' Company against the White bus line and the White stage line. In this case the commission ordered the White bus line and the White stage line to desist operating as a transportation company between Santa Ana and Anaheim and intermediate points. The defendant companies hold an operative right for a through service between Los Angeles and San Diego, and because of this claimed the right to operate a local service between Santa Ana and Anaheim, which are way points, without obtaining from the commission a certificate of public convenience.

The commission holds that, notwithstanding the defendant companies were operating before the statute of 1917, they are subject to regulation by the commission. The decision says:

The only basis for any distinction between transportation companies operating prior to May 1, 1917, and those which commenced subsequent to that time is in the manner of creation of their operative rights.

The commission in its decision points out and holds that the act in effect declared that such operations as were actually being carried on in good faith on May 1, 1917, would be recognized as a lawful right to be exercised by those then in enjoyment. Every subsequent deviation from or change in such operations must be under the approval and authorization of the regulatory body.

The decision also lays down the rule that a company would have the right to put on local service to the extent only that it was its duty to render it as the company had held itself out to do prior to May 1, 1917.

This ruling will affect a number of companies operating under rights acquired before May 1, 1917. The commission holds that all companies originally operating between through points must obtain a certificate of public convenience and necessity in order to initiate local service.

Transportation News Notes

Fares Must Go Up in Findlay.—The fare at Findlay, Ohio, will be increased to 10 cents beginning July 1. The lines there are operated by the Toledo, Bowling Green & Southern Traction Company, under the service-at-cost plan and have been showing a deficit under an 8-cent fare. Riding has shown a decrease each month since the plan was adopted.

Lower Fares in Effect.—The Waterloo, Cedar Falls & Northern Railway, Waterloo, Ia., has announced a new fare schedule whereby thirteen tickets will be sold for \$1, heretofore restricted to workmen. It is believed that the lower rates will increase the patronage which decreased after September, 1920, when the 10-cent rate went into effect. This 10-cent rate remains in force for cash fares. The lower rate will be an experiment, the company reserving the right to revoke the order if operation under it is found to be unprofitable.

Jitneys Ruled Off Flint Streets.—In order to eliminate traffic congestion on streets where cars are operated the Flint City Council recently ruled jitneys off streets on car line routes. The ordinance provides that bus operators will have to file with the city clerk a statement on the proposed route, terminals and hours of operation. Approval of the council will be necessary before jitneys can run. Recently the Flint City Council authorized a 6-cent rate after the Detroit United Railway which operates in Flint had asked for a fare readjustment and the elimination of bus competition.

New Rates Filed.—The Pacific Power & Light Company, Astoria, Ore., has filed a new tariff with the Oregon Public Service Commission providing increased fares on the traction lines of the corporation, together with slightly advanced charges for gas. Under a new law enacted at the last legislature, tariffs of this character have to be filed with the public service commission 30 days before becoming effective. If not suspended by the commission before the end of the 30-day period, the rates become operative without a hearing or other formality. For single rides up to the length of the line in either direction, the company has asked that the cash fare be increased from 5 to 7 cents. Ticket books, good for 50 rides up to the length of the lines in either direction have been fixed at \$3, while student ticket books, good for 40 rides up to the length of the lines in either direction have been set out in the tariff at \$1.75. This is an increase from \$2.50 for five-ride ticket books, and \$1.50 for student ticket books,

Personal Mention

New Officers for Southern Public Utilities Company

D. G. Calder, manager of the Charlotte branch of the Southern Public Utilities Company, has been selected treasurer to fill the vacancy caused by the election of E. C. Marshall as president to succeed Z. V. Taylor. A. B. Skelding, of utility fame, now steps into the managership of the property.

Mr. Calder is well equipped to fill his new position, having gained much experience since assuming the managership when the company was formed some years ago. Prior to his services with the Southern Public Utilities he was connected with the Catawba Power Company.

A. B. Skelding, the new manager of the Charlotte branch, is one of the best known utility men in the South. For the past three years he has been assistant to the president of the Carolina Shipyard. For many years prior to his association with the shipyard he was general manager of the Tidewater Power Company. His record of service includes experimental work with Thomas A. Edison and managing railway systems at Knoxville, Tenn.

Life Sketch of "Sam" Riddle

A brief review of the business life of Samuel Riddle and his connections with the Louisville (Ky.) Railway was recently published by a local paper, along with a silhouette of the man. It was said that during the time that Mr. Riddle has been with the railway he has been in practically every department in an executive capacity.

Commission Man Heads Engineers

Harry O. Garman, Indianapolis, Ind., has been elected president of the American Association of Engineers at its annual meeting in Buffalo. The organization has more than 25,000 members. Mr. Garman, who was first vice-president of the association, was nominated by the Indianapolis chapter. He is chief engineer for the Indiana Public Service Commission, with which organization, together with its predecessor, the State Railroad Commission, he has been associated for more than thirteen years. He is a past-president of the Indiana Engineering Society, member of the American Railway Engineering Society, associate member of the American Society of Civil Engineers and associate member of the American Institute of Electrical Engineers. For ten years he was an instructor and associate professor of civil engineering at Purdue University. He formerly was

assistant engineer of the Illinois Central Railroad, and is a director of the City Trust Company, Indianapolis.

New Twin City Vice-President

T. Julian McGill, Westinghouse Man at Chicago, Enters Railway Operating Work

T. Julian McGill has been elected by the board of directors of the Twin City Rapid Transit Company, Minneapolis, Minn., vice-president of that company and underlying companies. Mr. McGill will move to Minneapolis within the next sixty days and will take up actively his duties as vice-president in charge of operation of the Twin City lines.



T. J. MCGILL

Mr. McGill is at present manager of the Westinghouse Company's largest distributing plant in Chicago. He is well known throughout the entire West, more particularly in Minnesota, where from 1903 to 1909 he was manager of the Minneapolis office of the Westinghouse Company, having charge of all the Northwestern States including Montana and a large part of Canada. He has been connected with the Westinghouse Company since 1898. In 1909 he was transferred to Atlanta and in 1914 was made manager for the company in Chicago with jurisdiction previously noted.

It is expected that as vice-president in charge of operation Mr. McGill will take over a large part of the work connected with that department which has previously devolved upon Horace Lowry as president of the company.

The Twin City System is one of the largest of its kind in the country with a wide diversity of interests, its activities even including the operation of steamboat service on Lake Minnetonka. In the system are included 452 miles of line.

Managers and Superintendents Reassigned by Eastern Massachusetts Company

Transfers of managers on the Eastern Massachusetts Street Railway have been ordered by R. B. Stearns, vice-president and general manager, effective on July 6. The changes were brought about as a result of the death of Manager James O. Ellis of the Chelsea District and the resignation of Manager Harrah K. Bennett of the Melrose-Woburn District. They are as follows:

Manager Frank I. Hardy of Salem to manager of Chelsea and Melrose-Woburn Districts.

Superintendent Vard B. Leavitt of Lowell to superintendent of Melrose-Woburn District.

Manager Maurice E. McCormick of Quincy to manager of Salem District.

Charles E. Whalen of Boston Office to superintendent of Lowell District.

Manager Garfield S. Chase of Haverhill to manager of Lawrence District.

Superintendent Francis J. O'Donoghue of Brockton to manager of Haverhill District.

Manager John H. Hayes of Lawrence to manager of Quincy District.

Manager Patrick F. Sheehan of Brockton to manager of Fall River District.

Manager A. J. Boardman of Fall River to manager of Brockton District.

Mr. Devlin's Successor Appointed

Harvey W. Brundige on May 10 took office as president of the California State Railroad Commission, following his election to succeed Frank R. Devlin, who resigned from the commission May 1. Mr. Brundige was appointed to the State Railroad Commission two years ago for a six-year term by Governor William D. Stephens.

During his residence in southern California he has been prominent both in civic affairs and in matters of state importance. He has a national reputation in newspaper circles, having worked for several years in the East before going to California. He formerly was editor of the Los Angeles *Evening Express*. By reason of his experience in commission affairs he is said to be unusually well fitted for the office of president.

The membership of the railroad commission is now composed of H. W. Brundige, Los Angeles; H. D. Loveland, San Francisco; Chester H. Rowell, Fresno; Irving Martin, Stockton, and H. Stanley Benedict, Los Angeles.

Jess Marple, former superintendent of the Moundsville division of the Wheeling (W. Va.) Traction Company, has resumed his old duties after working for some time in Pittsburgh. William A. Smith, who has been acting superintendent of the Moundsville division, has returned to his duties as night dispatcher at Tenth and Main Streets. William Meyers, who has been acting dispatcher, has resumed his duties as trainman.

Clarence J. Shearn, Ex-Supreme Court Justice, has been appointed special counsel to assist the New York Transit Commission. Mr. Shearn, experienced in municipal and railroad law, will guide the commission in outlining a new plan for transit reorganization.

Ivan Bowen, Mankato, Minn., has been appointed by Governor J. A. O. Preus to the Minnesota Railroad & Warehouse Commission to succeed the late Judge Ira B. Mills. Thus Mr. Bowen becomes a commissioner at the beginning of the action by the electric railways of the State to have valuations of their properties made on which the commission is to base its order for rates which the various companies may charge for fares.

Howard T. Kingsbury, attorney in New York City, has been appointed counsel to the Transit Commission, in place of Louis C. White, who has resigned to enter private practice. Mr. Kingsbury was formerly a special assistant to the United States attorney-general in the prosecution of anti-trust cases in 1914. He is a graduate of Yale University and New York Law School and at present is judge advocate general of the New York State Guard, with the rank of lieutenant-colonel.

W. R. Williams, secretary of the California Railroad Commission's office at San Francisco, resigned on May 11 to become examiner for the commission and the head of the Los Angeles office. He will be succeeded as secretary by Colonel H. G. Mathewson, commander of the 40th Railroad Artillery Regiment in the World War, former commander of the American Legion in California and at present assistant secretary of the commission. Mr. Williams succeeds as head of the commission's office in Los Angeles Miss Converse, whose resignation was noted in the issue of this paper for May 7.

R. E. Luellen, safety engineer, Union Traction Company of Indiana, Anderson, Ind., has been appointed chairman of the bulletin committee, electric railway section of the National Safety Council. This committee is charged with the work of collecting data from the member companies from which to prepare the weekly bulletins distributed by the council. Mr. Luellen is editor of the magazine *Safety* published by the Union Traction Company of Indiana and is in charge of the company's power saving department, which is engaged in a very successful campaign of investigating and reducing the power consumption of its cars.

Frank M. Kemp, who has been connected with the general offices of the Gary (Ind.) Street Railway since March, 1912, and who has been chief clerk for the last five or six years, was appointed on May 22 as treasurer of the company, and also of the Gary and Valparaiso Railway, to succeed the late Lewis E. Woodward. Mr. Kemp, in addition to his duties as treasurer of both traction companies, will discharge the duties of chief clerk until the latter position

shall have been filled by appointment. The Gary Street Railway and the Gary and Valparaiso interurban system are operated by the same management, and for that reason Mr. Kemp became treasurer of both systems. The appointment was made today by President Charles W. Chase, who is president of both companies.

F. J. Foote Advanced

Experienced Master Mechanic Now
Superintendent of Power
on Ohio Electric

F. J. Foote who for the past twelve years has been connected with the Ohio Electric Railway, Cincinnati, Ohio, as master mechanic in charge of car equipment and shops, has been promoted to the position of superintendent of power. He has been given, in addition to his former duties, the supervision of the power houses and substations on those properties of the system known as the Indianapolis,



F. J. FOOTE

Columbus & Eastern Traction Company and the Columbus, Newark & Zanesville Traction Company. This includes two large power houses and fourteen substations.

Mr. Foote is well qualified for the position of superintendent of power, being a graduate of the University of Illinois and a post graduate of the University of Wisconsin, where he received the degree of electrical engineer in 1902. He has also had wide experience in power station work, having held the position of electrical engineer on heavy construction work for both the Allis-Chalmers Company and the Westinghouse Electric & Manufacturing Company and was also for several years chief operating engineer for a large manufacturing company.

Before taking up his technical studies Mr. Foote learned the trade of machinist and worked in various shops for several years. He has found that the hard knocks and practical experience in the shop have been of great value to him ever since. Mr. Foote's headquarters are at Springfield, Ohio.

Obituary

Charles H. Edmunds, a member of the legal department of the Philadelphia (Pa.) Rapid Transit Company, died on May 6. He was also a member of the Board of Education of Philadelphia and a prominent attorney of that city. He was born on Nov. 26, 1862.

George C. Hoffman, who had been in the employ of the Third Avenue line of the Interborough Rapid Transit, New York, for nearly forty-one years, died at the age of sixty-two. During his railway career he had held positions as a train starter, dispatcher and day trainmaster of the Eastern Division.

Thomas S. Wood, for twenty-seven years resident counsel for the Duluth (Minn.) Street Railway Company and attorney for several railroads and other corporations, died suddenly of heart failure on May 18 at the age of sixty-three. He was an intimate friend of William H. Taft, former President.

T. E. Gatehouse, who for nearly forty years was editor and part proprietor of the *Electrical Review*, London, died several weeks ago in his sixty-seventh year. In his earlier days he was engaged in submarine-cable and electric-lighting work, and in 1882 he became editor of the *Electrical Review*, which is one of the most important technical publications in Great Britain. He was a member of the Institution of Civil Engineers, of the Institution of Electrical Engineers and a fellow of the Royal Society of Engineers. His death has caused a gap in British electric circles and in technical journalism.

Thousands Pay Final Tribute to Master Interurban Builder

Hundreds of railway and electric light men from all over Texas attended the funeral in Dallas, Tex., of Col. J. F. Strickland, whose death was noted in the *ELECTRIC RAILWAY JOURNAL* recently. Not only did business men from other cities come to pay tribute to his memory but thousands formed in a funeral cortege to show the high esteem in which the master interurban builder was held. Since his death telegrams and messages of condolence have been pouring in from utility operators and financiers located in all parts of the country.

Col. Strickland's death was caused by heart failure. He had been suffering with a weak heart for several months and had planned to start on a long vacation beginning May 23, in the hope of regaining his strength. Physicians say his heart trouble resulted from overwork. He was an indefatigable worker and had been at his office early and late recently on account of the application to city commissioners for an increased fare.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

Still Lower Prices on Scrap Iron and Steel

Pig Iron and Sheet Prices Show Revisions Downward in Market About 25 per Cent in Production

During the past week, while there have been only few price revisions of new steel and iron products, there have been several items in the scrap lists which have succumbed to lower prices. Basic pig iron, delivered Pittsburgh, is off 50 cents to \$22.96; foundry in Chicago, delivered, is off the same amount to \$21.70; No. 2 foundry, Cleveland, is off nearly \$1 to \$23.50, and various pig irons, f.o.b. furnace, Buffalo, are off from 50 cents to \$2. There is a \$5 lower market in sheets, quotations on black sheets, Pittsburgh, being obtainable at 3.75 cents and galvanized at 4.75 cents. The upper limits are 4 and 5 cents respectively. The range on blue annealed is 2.85 cents to 3.10 cents. Activity in the steel industry is extremely low with little change from the average rate of operation of 25 per cent noted last week.

The scrap metals show several reductions. Old iron car wheels are \$1 lower in Pittsburgh to \$14-15 in gross tons, delivered; 50 cents lower in Chicago to \$13-13.50 and \$1.50 lower in New York to \$12.50-13. Steel car axles in Pittsburgh are 50 cents off to \$14.50-15.50; steel railroad axles in New York are \$1 lower to \$10.50-11; in Chicago the drop is 50 cents to \$13-13.50. Rerolling steel rails in New York show a 50-cent reduction to \$9.50-10; in Philadelphia the result is \$1 off to \$12.50-13. Old iron rails at Chicago are \$1 lower to \$16-16.50. Frogs, switches and guards are 25 cents lower in Chicago to \$10.75-11.25, and old short steel rails there are off 50 cents to \$12-12.50. Steel springs in Chicago are also 50 cents lower to \$12-12.50. In this scrap market, too, buying is listless.

Prompt Deliveries of Motor-Driven Track Grinders

Good Demand of First Quarter Reported to Have Shown a Decrease Recently—Some Repair Buying

Buying of motor-driven track grinders is not large at the present time, manufacturers report. One of the largest producers does say that demand was very good during the first quarter and well into the second, but recently it has shown a marked falling off. On the whole, makers of this class of equipment do not seem pessimistic, for some report that considering present abnormal business conditions the volume of orders received is good; others state that

they would not expect a large sale of new equipment just now. A few inquiries are being received from steam roads but not many orders. A feature of the present market is the number of orders received in certain quarters for repair parts to enable electric lines to put their track grinding equipment into shape.

Shipments are exceedingly prompt in general, some producers being able to ship motor-driven grinders in one week or even less, and others being able to deliver up to three machines at one time within ten days of receipt of order. Of course this varies depending upon the electrical specifications and capacity of the tool. Raw material is in plentiful supply and about the only limiting factor in deliveries is the time of manufacture.

Raw material in this field has been reduced from 20 to 50 per cent, it is stated, but the price situation on the finished product is not uniform. One producer, for instance, has reduced prices 10 per cent, while another has made no cut, it is stated, because prices were not boosted during the war. Working forces have been reduced as much as one-third and wages are down about 12 per cent with some manufacturers, while several others report no reduction in wages as yet, though conditions, it is stated, make it seem as though this will be necessary.

Germans Competing for Railway Business

That recent activity in Germany along certain lines of steel manufacture such as rails and car wheels has offered competition to American producers has been previously noted in these columns. Germany plans to make further bids for wresting business away from foreign competitors, however, for according to a report of the Guaranty Trust Company of New York, just issued, the government has reduced export duties on pig iron, machine parts, rails, sleepers, axles, points, springs and ball bearings among other products. The new rate is 1 per cent, compared with a tax of 3 to 10 per cent formerly.

In addition the report states that the Linke-Hofman Company at Breslau, one of the leading German manufacturers of railway stock, has just completed large orders for the Belgian, Czechoslovakian and Norwegian governments. The manufacturers of railway supplies in Germany report a veritable glut of orders, especially from South Africa, France and China. The Russian Soviet government has placed a large order in Germany for rails, sleepers and other permanent way materials.

National Pneumatic Company After European Business

President and Vice-President, Soon to Sail, Believe Manufacturers Here Must "Beard Lion in Den"

With the object of stimulating interest abroad in the products of their company, Harold Rowntree, president of the National Pneumatic Company, New York City, and Thomas W. Casey, vice-president, expect to make a business trip to Europe next month. Mr. Rowntree and Mr. Casey will sail on the Olympic, July 16, to be gone about three months. Their itinerary includes London, Paris, Holland, Italy and possibly Madrid. Among the more important properties they will visit are the London underground railway system, the Metropolitan Underground of Paris and the Amsterdam surface lines, the latter of which is already doing business with the National Pneumatic Company.

The most important object in view in making this trip, Mr. Casey states, is to interest the two main underground railway systems of Europe in the American practice of multiple-unit system of train control. A subway is now building in Madrid, Spain, which will offer a possible additional market. It is not the intention to visit Germany at the present time. Second to the institution of this system of train control will be the endeavor to interest railway lines in the company's system of pneumatically operated doors.

Mr. Casey is very optimistic over the prospects for business abroad. At the present time he believes that American manufacturers are sitting by too quietly waiting for both domestic and export business to come to them, when the proper procedure he thinks, is to "beard the lion in his den." "The business is there waiting in Europe, but American producers must go after it and wake up foreign buyers before the three obstacles of exchange rates, tariff and competition will ever be overcome." If the company finds a decided prejudice against products manufactured outside the buyer's own country, it will endeavor to have other countries manufacture under its patents.

Current Prices of Cross-Arms

In connection with the article on buying of cross-arms which appeared in last week's issue mention was made of a 10 per cent drop on yellow pine arms earlier this month. Prices now in effect on these arms, quoted by a representative producer, are given below.

The quotations given cover 75 per

cent heart, long-leaf yellow pine and are made f.o.b. Hattiesburg, Miss. Corresponding prices of McCormick fir arms are also given.

Electric light arms, two-pin, 3 ft. x 3½ in. x 4½ in., less than 1,000 lineal ft., \$28.61 per 100 net, over 1,000 lineal ft., \$25.43; 6 ft. x 3½ in. x 4½ in., six-pin, less than 1,000 lineal ft., \$57.23, over 1,000 lineal ft., \$50.87; N. E. L. A. arms, 5 ft. 7 in. x 3½ x 4½ in., four-pin, less than 1,000 lineal ft., \$64.72, over 1,000 lineal ft., \$57.52; New England arms, 5 ft. 6 in. x 3½ in. x 4½ in., four-pin, less than 1,000 lineal ft., \$57.23, over 1,000 lineal ft., \$50.87. Quotations on the same size arms as above, in the same quantities f.o.b. cars Rutherford, N. J., on McCormick fir are as follows: \$51.09, \$45.41; \$102.18, \$90.83; \$115.56, \$102.72; \$102.18, \$90.83.

Excellent Deliveries on Malleables

Production Down to One-quarter Capacity as Buying Is Flat—Prices from 5 to 25 per Cent Down

Under present conditions of demand delivery of malleable-iron products is only limited by the time required in manufacture. For standard-pattern items this would probably range in the neighborhood of one month. In view of the situation prevailing in the malleable market just one year ago it seems almost incredible that conditions could have exactly reversed in so short a time. Twelve months ago deliveries were anywhere up to a year behind, while at present operation in this field is only about 25 per cent of capacity and new business is very scarce. The automobile trade, one of the large consumers of malleables, has long been flat, and though it shows some improvement now, automobile manufacturers are well stocked with malleable material purchased at higher prices than now prevail. Railroad buying amounts to little or nothing at present and foreign purchasers are not buying in this country. To make the depression seem worse, the industry is undoubtedly "over-factoried" as a result of war-time expansion.

Prices have followed the pig-iron market down, but not nearly to so great an extent because of the labor factor. Valley furnace malleable pig, Pittsburgh, is worth \$23 per ton at present, a drop of more than 50 per cent from the peak. Prices on heavy malleables are estimated to be down from 20 to 25 per cent and more, but on light castings the drop has not been great, being only about 5 to 10 per cent. The reason for this difference is the increased unit cost on the small items due to handling, labor and other charges. Wages are down about 20 per cent, it is stated.

At the present time word has already gone out in the trade of a further reduction in the price of malleables to be made on July 1 amounting to 10 per cent. There seems little hope of this bringing about a stronger volume of buying, very soon, however.

Wood Tie Demand Not Responding to Low Prices

Existing High-Priced Contracts Which Expire July 1 Retard Buying—Water Freight Rates Down

Although producers state that the present is a favorable time to buy wood ties, and prices are down to a level that even buyers admit is about bottom, demand has shown little or no improvement. Current buying is for spot shipments and in much smaller quantities than usual, as it merely covers imperative maintenance needs. Some producers are optimistic that the wood tie business will pick up late this summer, but others can see no activity ahead this year.

Since before the war the roadbed maintenance needs of railroads have piled up and that there is a good future market most people admit. The unknown factor is the extent to which roads throughout the country are stocked with ties, as reports differ on this. If one large steam railroad in the East is a criterion then stocks of ties awaiting use are large, but on the other hand some producers believe they are small in general. Contracts for ties delivered along the right-of-way will not run out until July 1 in a number of instances, and this of course has retarded buying as existing contracts were placed at the high prices of last year. It is these ties, purchased to cover forward needs while deliveries were running long, that represent existing stock in certain quarters.

Producers have decreased production materially, in fact cuttings are made to replace surplus and little else and stocks are under normal too, but at the same time competition is very keen and immediate deliveries are made in general. Prices, as stated before, are well down. A hewn, yellow-pine, sap tie, 8 ft. x 6 in. x 8 in. that sold delivered in New York harbor for \$1.65 each at the peak price during the last half of 1920 now brings 95 cents each, a drop of 42 per cent. This reduction is in large part due to the decrease in water freight rates, as most of the Southern pine ties are shipped by water. The present water freight rate on ties shipped to New York in a representative instance is 35 cents each plus a 3-cent tax. This represents a 36 per cent cut from the peak rate of 55 cents and 3 cents tax.

Possible Electric Project for Asia Minor

The National Assembly of the Angora government, according to a report from Assistant Trade Commissioner Gillespie at Constantinople, has authorized the construction of a railway from Sivas to Samsun on the Black Sea. It is quite possible that sufficient water power may be developed from the Kizil Irmak River to permit the electrification of this railroad, which will be less than 200 km. in length. No equipment has been purchased nor has contract for construction been placed.

Rolling Stock

Orleans-Kenner Electric Railway Company, New Orleans, La., has placed in operation one 35-ft. combined passenger and freight-carrying interurban car with a seating capacity of forty-eight persons. The car was built at the company's own shops and completed in thirty days' time, believed to be a record for car construction in the South.

Pittsburgh (Pa.) Railways, mentioned in the Nov. 6, 1920, issue as purchasing twenty-five new double-truck cars, has placed the first of these cars in service. The remainder will follow at the rate of four or five a week, and delivery of the entire number will be completed by July 15, it is expected. The cars, which cost about \$14,400 each, are the product of the Standard Steel Car Company, Pittsburgh, Pa., being equipped with Westinghouse electrical apparatus and air-brakes. They were purchased out of the general earnings of the company.

Recent Incorporations

Depew & Lancaster Railway, Lancaster, N. Y.—The Depew & Lancaster Railway, Lancaster, N. Y., has been incorporated by J. J. and E. J. Lenahan and P. Fitzpatrick. The company is capitalized at \$200,000 and proposes to operate an interurban electric line from Lancaster to Cheektowaga. The company is represented by T. C. Burke, Marine National Bank Building, Buffalo. This is the successor company to the Buffalo & Depew Railway sold some months ago.

Track and Roadway

Morris County Traction Company, Morristown, N. J.—The Morris County Traction Company is laying new steel rails and new ties and removing the line from the middle to the side of the streets through Wharton, N. J.

Cleveland (Ohio) Railway.—The Cleveland Railway is planning to build 25 miles of new track this summer to replace existing construction. Of this amount, approximately 9 miles have been completed to date.

Tulsa-Sapulpa (Okla.) Interurban Railway.—The Tulsa-Sapulpa Interurban Railway, controlled by the Oklahoma Union Railway, has announced that it will extend its electric line from Keifer to Okmulgee before the end of the year. The extension has been talked of for some time, and will pass through Mounds and Beggs and the rich Beggs oil district adjacent to Okmulgee.

Windsor, Ont.—The Windsor City Council on June 14 authorized the expenditure of \$900,000 for improvement of the local street railway system, which is operated by the Hydro-Electric Power Commission of Ontario.

Toronto (Ont.) Railway.—The Toronto City Council, at a meeting on June 14, sanctioned a credit of \$7,000,000 for rehabilitation, extensions and equipment for the Toronto Railway system.

Portland Railway, Light & Power Company, Portland, Ore.—A communication demanding that the Public Service Commission of Oregon compel the Portland Railway, Light & Power Company to make the improvements in the maintenance and repair of its tracks which were promised at the time that an increase from 6 to 8 cents in fare was granted was forwarded to Salem recently. It is claimed that the city has failed by a total of \$750,976 to keep its implied promise.

Dallas (Tex.) Railway.—The Dallas Railway has no funds with which to lay tracks on St. Paul from Elm to Commerce Street, necessary to make possible the rerouting of the Harwood-Oak Lawn cars to eliminate the "goose-neck" routing down McKinley Avenue and Lamar Street. To lay tracks on St. Paul from Elm to Commerce would cost \$100,000, according to engineers of the traction company. The new line on Masten Street will not be used, at least for the present, except for a distance of one block, the San Jacinto line being rerouted to use this portion of the new line.

Tacoma Railway & Power Company, Tacoma, Wash.—The Tacoma Railway & Power Company, according to Manager Richard T. Sullivan, cannot consider the extension of the street car line into the Stevens Street district at its own expense. At a recent meeting of the company officials, city officials, and residents of the district various methods of securing construction of the line were discussed, but no agreement was reached.

Power Houses, Shops and Buildings

United Railways, St. Louis, Mo.—The United Railways is considering putting in operation automatic substations for city use. The total capacity will be 8,000 kw.

Public Service Railway, Newark, N. J.—The Public Service Railway is building a new terminal at the entrance of Clementon Park, Camden County. Double Tracks are being laid on the terminus to give better service, and the building of a ticket office will begin soon. The company has placed a scissors cross-over at the Berlin road crossing so cars can be switched from one division to the other.

Cleveland (Ohio) Railway.—The Cleveland Railway is making a study of its entire power distribution system looking to complete revision of the feeder system. This study is being made partly to determine whether there is any copper not being fully used, and preparatory to the change in the power supply system which is going forward with the installation of automatic substations.

Professional Note

Charles W. McKay, until recently president of the firm of McKay & Sherman of Chicago, has become identified with the American Appraisal Company in the capacity of engineer, Public Utilities Department. Mr. McKay has been engaged in engineering and appraisal work since his graduation from Sibley College of Mechanical Engineering, Cornell University, in 1906. In July, 1906, he entered the employ of the New York & New Jersey Telephone Company (now the New York Telephone Company), and in 1909 he was appointed engineer for the North Brooklyn district, having charge of the preparation of plans and estimating for all outside construction work within the district. In 1911 he was appointed engineer of the Borough of Queens. During the year 1912-13 Mr. McKay was associated with Henry Floy in the capacity of assistant engineer, and in the summer of 1913 he became engineer to the McCall & Clark Company, of New York City. In October, 1913, he became affiliated with McMeen & Miller, Chicago, and later engaged in valuation work for the Central Union Telephone Company, and continued in this capacity until his appointment with the Cooley & Marvin Company as chief appraisal engineer. He later accepted a similar position with L. V. Estes, Inc., of Chicago.

Trade Notes

Frederick C. Horner, for several years transportation engineer of the Packard Motor Car Company of New York, is leaving the Packard Company June 18 to spend two years in Europe in order to make a close study of transportation practice in England, France, Belgium and Germany.

Handlan-Buck Manufacturing Company, St. Louis, Mo., manufacturer of railway supplies, announces the death of its president, A. H. Handlan, on May 28. Mr. Handlan was one of the pioneer railroad lamp and lantern manufacturers in the company's territory, having been in business more than fifty years. His three sons will continue the business as usual.

Barney & Smith Car Company, Dayton, Ohio, according to a recent statement of company officials, expects to receive sufficient orders from the Government of Mexico to justify reopening the plant, contingent upon the recognition of the Obregon government by this country. In this connection Lee Warren James, attorney and representative of the car company and Valentine Winters, receiver, made a trip to Mexico and as a result a number of well-known Mexicans have come to Dayton. Matters have now progressed past the tentative stage and Mr. Winters states that recognition of the Mexican government will mean the reopening of the Dayton car works.

Metal & Thermit Corporation, New York City, in order to handle more satisfactorily its growing detinning business in the West, has constructed and will shortly place in operation in South San Francisco, Cal., a large new plant for the production of detinned billets, in addition to the detinning plants already operated by this company for several years at Chrome, N. J., and East Chicago, Ind. The new plant has also been equipped with a large welding shop containing equipment and facilities for undertaking repairing by the Thermit process. With this new equipment at its disposal the company is well prepared to render service to its Western customers. The new South San Francisco plant will be in charge of E. Kardos, superintendent. The cost of the plant is estimated at about \$800,000. The former offices of the company, located at 329-333 Folsom Street, San Francisco, have been moved to the new location.

Howard R. Gass, for the past seven years senior in the engineering department of the Missouri Pacific Public Service Commission, has been appointed sales engineer for the St. Louis Car Company. During his association with the Missouri Commission Mr. Gass was engaged in the valuation of the properties of a number of important electric railways, also handling accident investigations, grade separation problems, signal and interlocking matters and conducting the annual inspection of steam and electric railways for the commission. Prior to this connection Mr. Gass was engaged in steam railroad construction work, having been in charge of viaduct and subway construction, third division of the Kansas City Terminal Railways, and field engineer in charge of all operations for the Union Depot Bridge & Terminal Company, North Kansas City, Mo., also having been associated with the Big Four, Kansas City Southern, St. Louis & San Francisco, M., K. & T., and other properties located in the Southwest.

New Advertising Literature

Steam Turbines.—Bulletin No. 42,019 of the General Electric Company is on the Curtis Steam Turbines for mechanical drive.

Transformers.—The Enterprise Electric Company, Warren, Ohio, is distributing a four-page pamphlet covering its "Peerless" transformers.

Hoists.—Two recent bits of publication from the Electric Hoist Manufacturers' Association, 165 Broadway, New York City, embody the slogan—"The Strong Arm of Industry." One of these bulletins, "Approved Applications," pictures and describes under 133 headings partial uses to which electric hoists have been applied, while the other one, "Monorail Runway Construction," gives specifications covering standard practice in monorail runway construction, including curves and tables.