

ELECTRIC RAILWAY JOURNAL

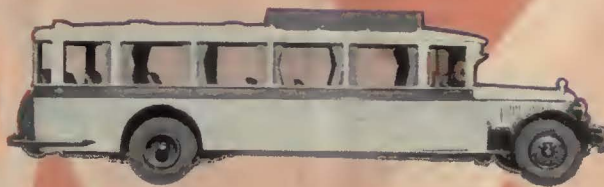
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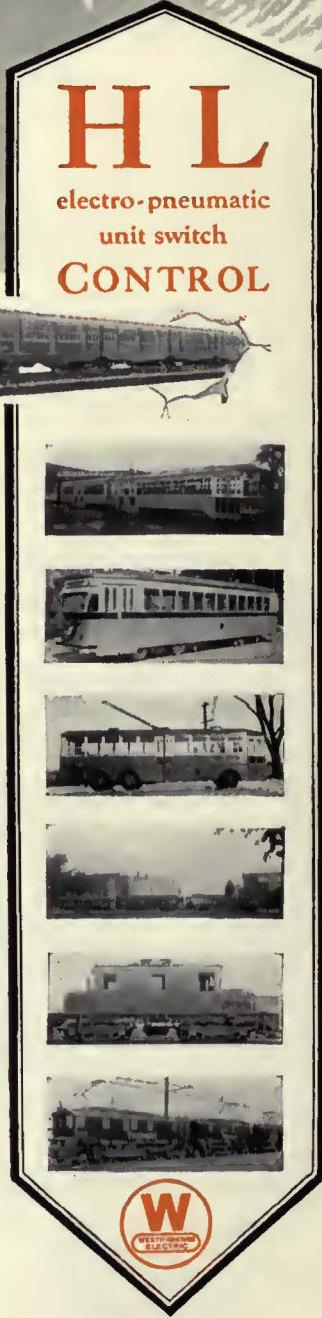
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BY R. P. STEVENS

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to Improve Employee Morale.....767

Accident reduction, decrease in labor turnover, improvement in company morale—these are direct benefits resulting from the organization of a personnel department by the Cleveland Railway. Better public relations naturally follow. The article in this issue outlines in detail the work done along these lines since the department was organized in 1927.

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Open Season for Conventions

EARLY summer is the open season for conventions. The JOURNAL's calendar of convention dates, run every week for the information of its readers, lists a long succession of meetings.

Sectional meetings are particularly valuable to those who attend. The discussion gets down to the intimate problems of everyday experience. It is more than worth the time and expense of attendance. Discussions at many sectional meetings develop ideas and experiences of national as well as local interest. Obviously, if the progressive operating man attends all of them, there would be time for little else. Nevertheless, all can profit from them, for the JOURNAL publishes prompt and full reports together with abstracts of the more important papers.

On page 777 of this issue is a report of the Southwestern Public Service Association meeting in Dallas last week. An address by President Stevens is on page 764. Don't fail to read both. Watch the JOURNAL during this open season for railway meetings. It brings you information and ideas that you can't afford to overlook.

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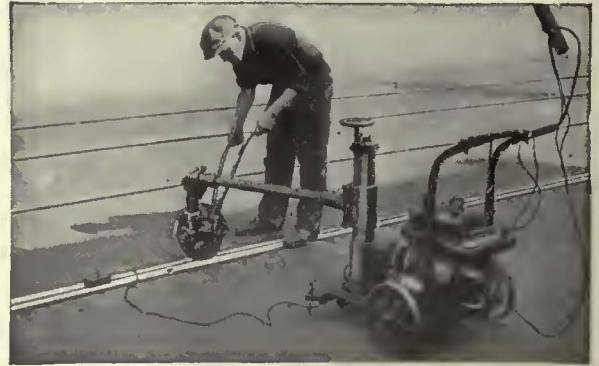
 BETTER RAIL, BETTER TRANSPORTATION

Bucket seats attract riders, bucking cars repel them.

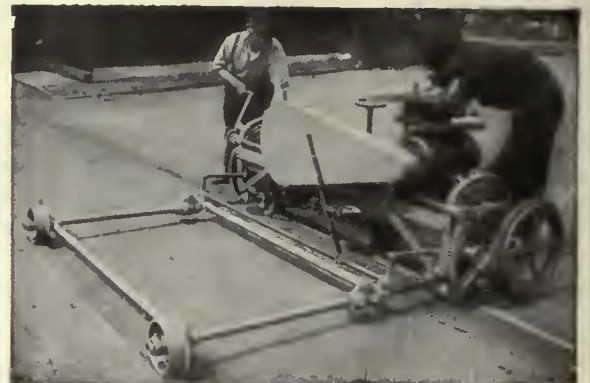
The greatest aid to comfortable riding is a smooth track.

Smooth it and keep it smooth by grinding.

Here are the tools.



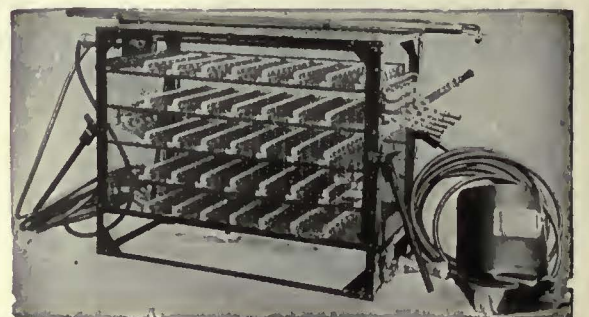
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Vulcan Rail Grinder



Reciprocating Track Grinder



"Ajax" Electric Arc Welder

Railway Trackwork Co.

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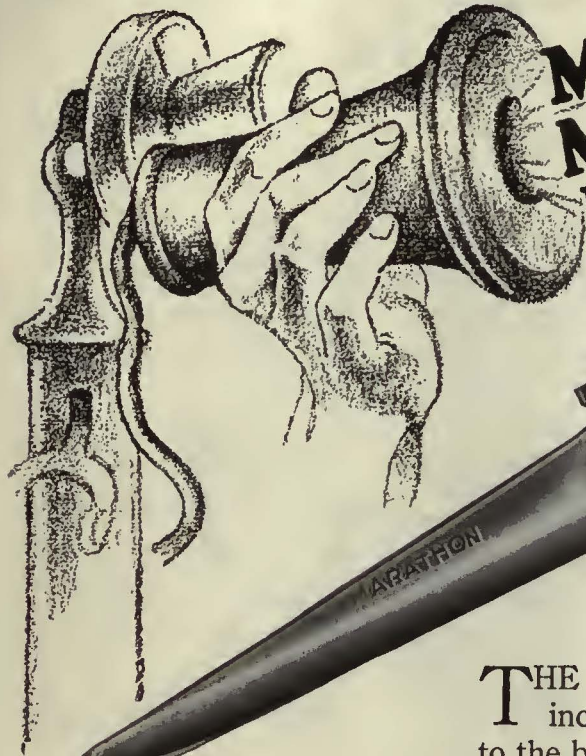
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⊕ 2334

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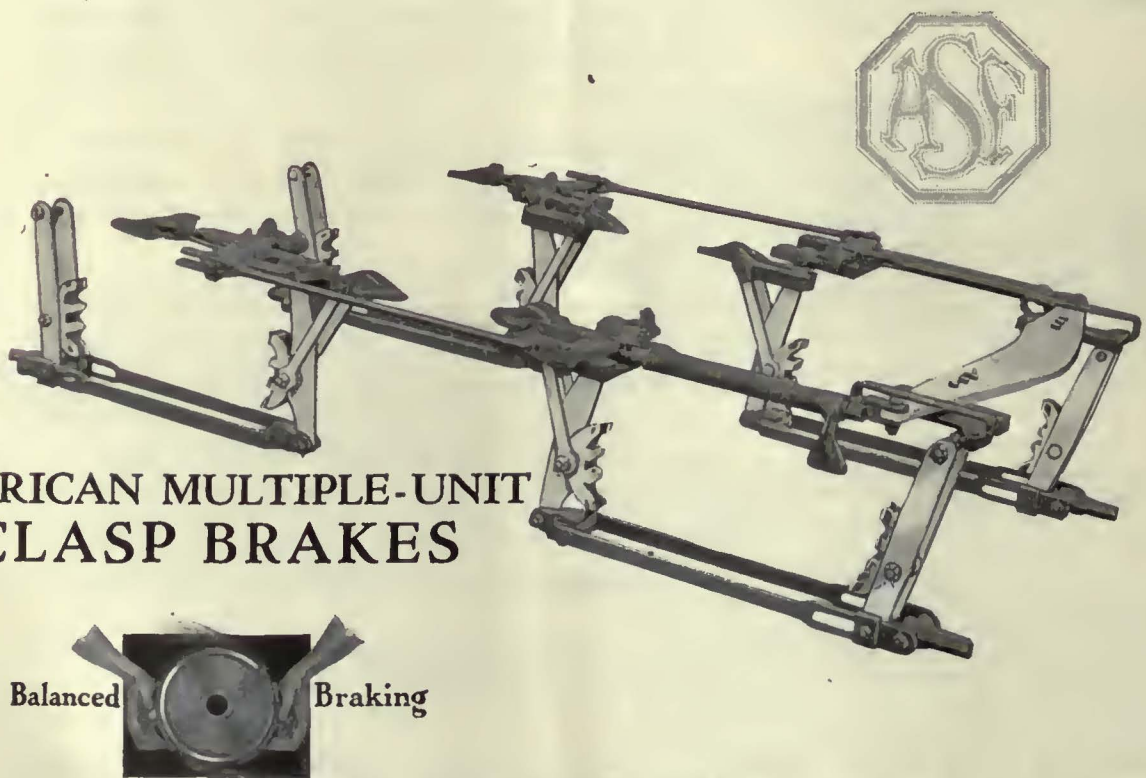
AS LOGICAL AS THE BALANCING OF SCALES



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In the modern railway clasp brake, equal pressure is applied to opposite sides of each wheel, through standard brake shoes, whereas the ordinary practice is to apply the force to one side only. The clasp brake, or balanced braking system, neutralizes the tendency to one-sided wear on journal bearings, pedestals and other truck parts. It affords smoother braking with less heating of brake shoes, and reduces the number of "slid-flat" wheels.

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CLASP BRAKES

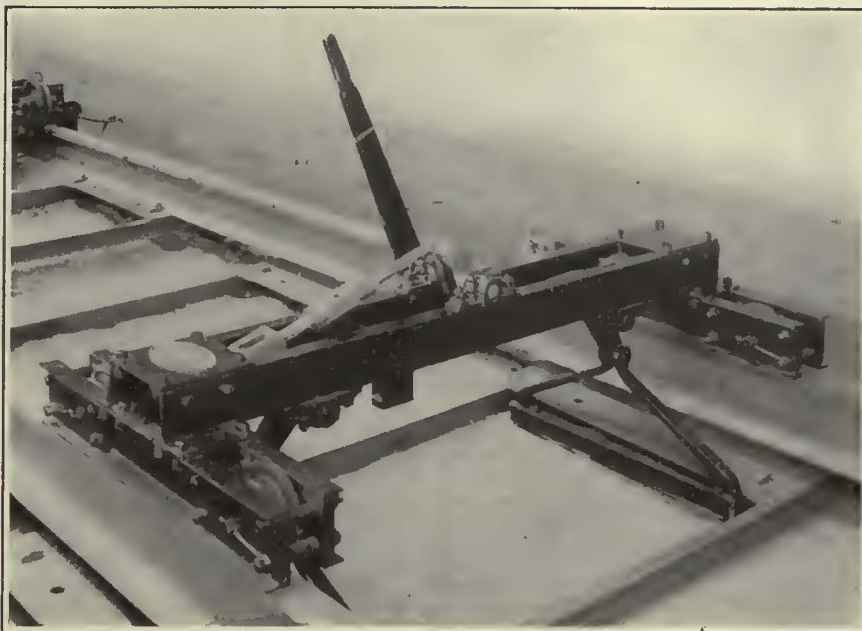
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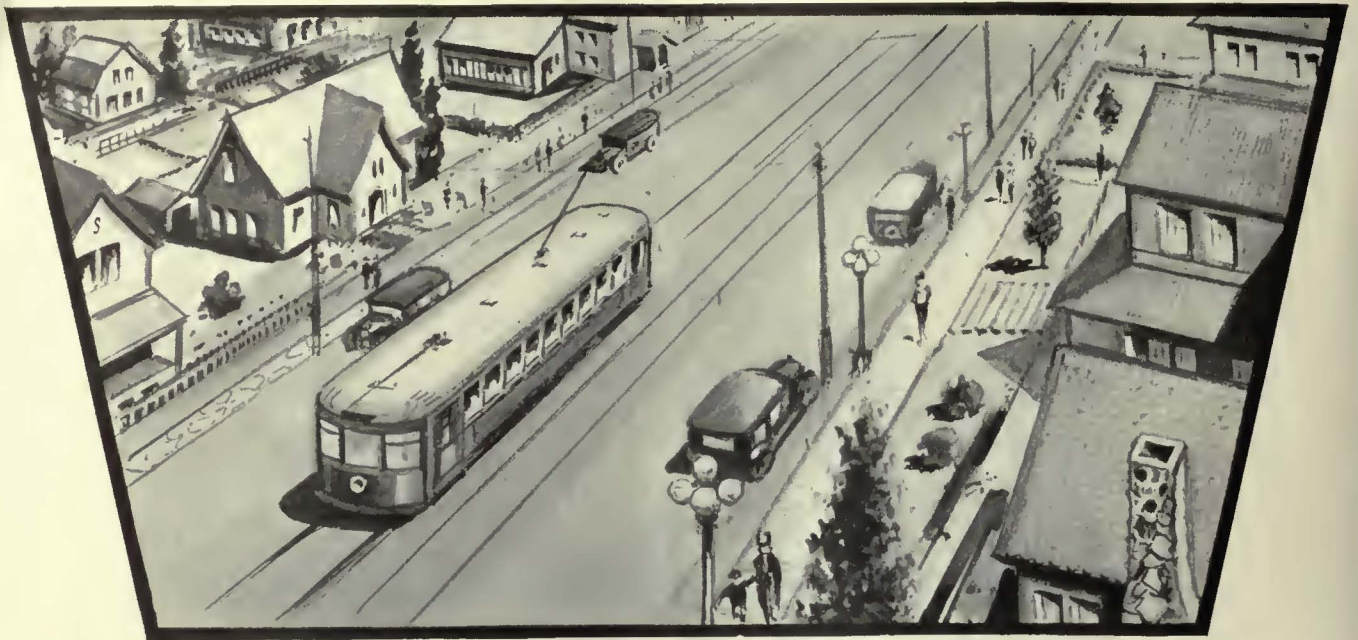
\$ 85⁰⁰

F.O.B. Cleveland

THE INTERNATIONAL STEEL TIE CO.
CLEVELAND, OHIO

STEEL TWIN TIE TRACK

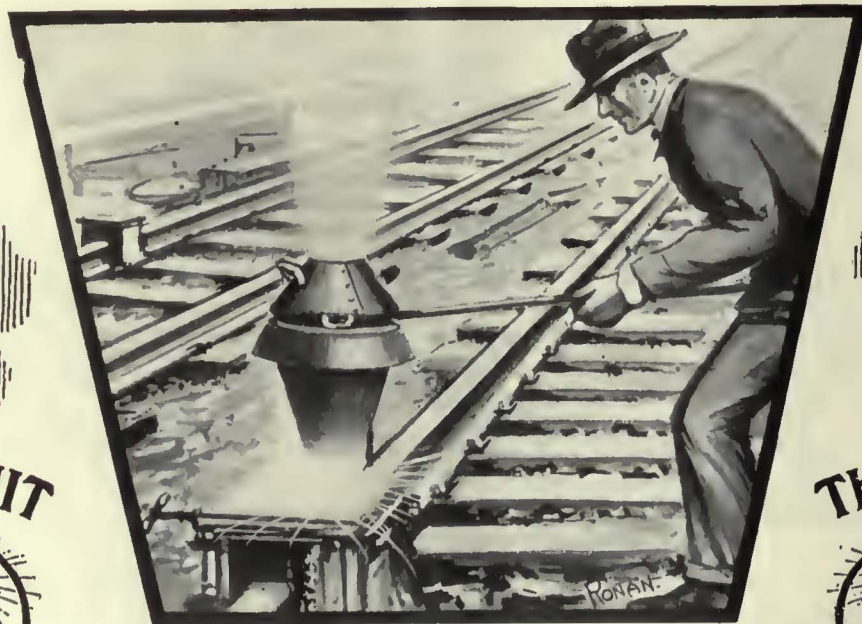
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What a difference it makes

Track which extends like unbroken ribbons of steel, smooth—even—perfect! Not a joint can be seen—because there are none! Cars roll almost silently! Maintenance costs on track, —and cars as well,—reduced to a minimum.

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Keystone-Equipped

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Faraday Signal System, with push buttons within easy reach of every passenger—for convenience in signalling the operator.

Golden Glow Headlights which provide safety for passengers and equipment. Their greenish glass reflectors last indefinitely and project a golden light which is less blinding and more penetrating than brilliant white light.

These Keystone specialties will help to build up Pontiac's patronage and create good will.

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Type 35 Hunter Sign—side window



Type 129 Hunter Sign—mechanism built-in front



Faraday Buzzer

*"The Successful Six"
Keystone
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Type RM-96, Golden Glow Headlight



Faraday Push

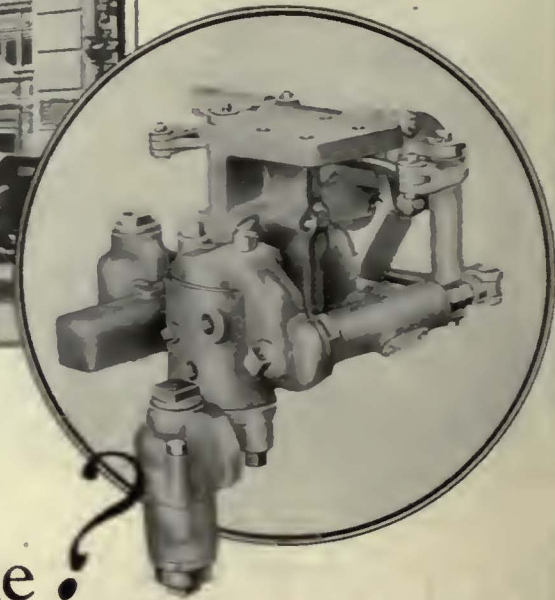


No. 22181 Faraday Resistance

ELECTRIC SERVICE SUPPLIES Co.

MANUFACTURER OF RAILWAY, POWER AND INDUSTRIAL ELECTRICAL MATERIAL





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WESTINGHOUSE TRACTION BRAKE CO.

General Office and Works, Wilmerding, Pa.

WESTINGHOUSE TRACTION BRAKES

*For extension
of Service*

**GRAHAM
BROTHERS
COACHES**

11

fit
because of
size-performance-cost!

No greater outlay required to increase service with Graham Brothers 21-Passenger Street Car Type Motor Coaches —

On a given capital investment Graham Brothers Motor Coaches will return a maximum of passenger-hour-miles.

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Graham Brothers coaches offer the low-cost means to your end. And in these time-tried coaches are all the advantages of low cost with none of its penalties.

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GRAHAM
MOTOR

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And comfort holds them.



Graham Brothers 21-passenger coach, body and chassis complete, is exceptionally low in price, due to great volume production.

COMPLETE \$4060
(f.o.b. Detroit)

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16 passenger Parlor Car, complete, \$4290

12 passenger Club Car, complete, \$4045

(Prices f.o.b. Detroit)

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EVANSVILLE — DETROIT — STOCKTON

A DIVISION OF DODGE BROTHERS, INC.
GRAHAM BROTHERS (CANADA) LIMITED, TORONTO, ONTARIO

300%
Greater Wear With
NUTTALL
Standard Helical Gears

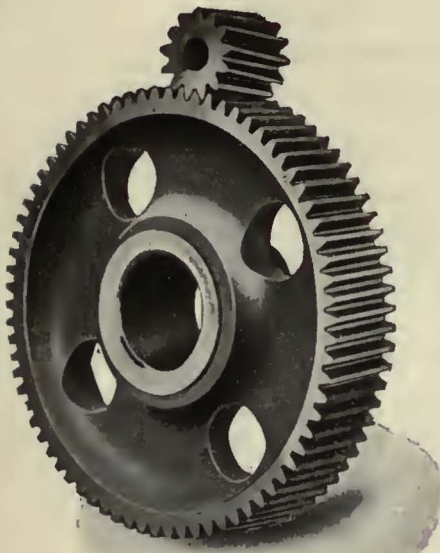


More and more traction companies are equipping their cars with Nuttall Standard Helical Gears, because of the decided advantages in the use of these superior generated and especially heat treated gears over standard untreated cast steel gears.

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With Nuttall gears you get three times the service of ordinary gears. What does that mean to you in repair and replacement economy?



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announces

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Brown Boveri has long been synonymous in the minds of well-informed American engineers with leadership in the field of power and electrical machinery. Principles of practice and many units of equipment attributable to this source have been put into operation in this country since the incorporation of American Brown Boveri and are confirming anticipated results in daily performance. The opportunity for



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actual demonstration under operating conditions is now afforded to interested engineers.

The main plant at Camden, N. J., has already completed delivery on several large contracts including electric locomotive equipments, steam turbo generators, high voltage oil circuit breakers, transformers, etc., all to exacting specifications and actual tests.

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6262

American Brown Boveri Electric Corporation

Camden, N. J

Graybar Bldg., New York

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—after 11 years

It's Dayton Tie Track



Here's a piece of track laid on Dayton Ties in 1918—eleven years ago.

Can there be any better testimonial of the lasting qualities of Dayton Tie Track?

And think of the reduction in car maintenance this permanently smooth track affords.

Small wonder that sales of Dayton Ties grow almost beyond belief.

The Dayton Mechanical Tie Co.
DAYTON, OHIO



TREADLE-IZATION for buses, also!

The Twin Coach provides for the circulating load with a front door for entrance and a rear door for exit. When a Treadle is used with the rear door the circulating load is attained with economy and safety. N. P. Door Control is standard equipment on all types of Twin Coaches.



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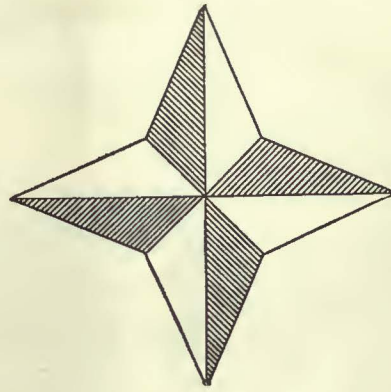
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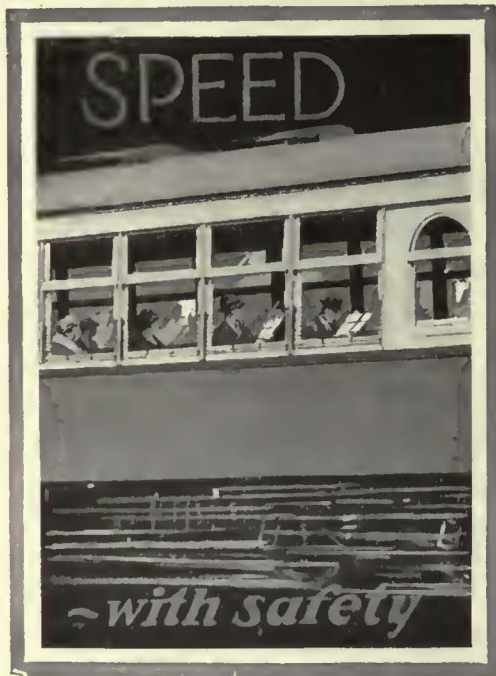
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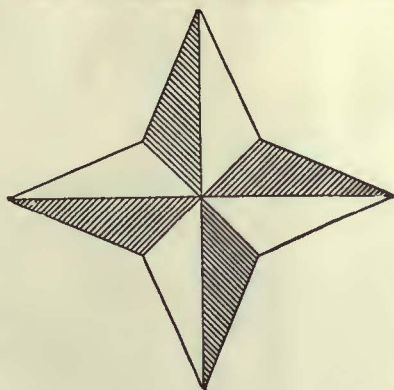
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1010 Colonial Trust Building



“We would have



“—we would have hit him hard but the magnetic brakes stopped us before we reached the crossing.”



hit him HARD—”

Cincinnati BALANCED Lightweight Cars combine “Speed with Safety.” They combine, too, the ability to prevent costly accidents with faster schedules—more car miles and greater earnings.

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Cincinnati Car Company, Cincinnati, Ohio

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BALANCED
LIGHTWEIGHT

CARS

—still a step ahead of the modern trend



27,491 miles of trucking with no road failures

This is the three months' record of eleven of the G-E equipped gas-electric trucks operated by the Philadelphia Rural Transit Company.

Used as snow fighters in the winter, these trucks have been remarkably successful in clearing the roads.

In the heaviest trucking service in other seasons, they must haul loads, including truck and trailer, of 16 tons, often over soft, yielding ground. Thus far, they have not been "stuck", nor have they had a single road failure.



The name, "G-E equipped gas-electric", has come to be synonymous with reliability and economy of operation.

If your service involves heavy loads or high speed, G-E electric drive on your trucks will prove of the highest value.

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

Electric Railway Journal

McGraw-Hill Publishing Co., Inc.
JAMES H. MCGRAW, President

Consolidation of
Street Railway Journal and
Electric Railway Review

CHARLES GORDON
Editor

Volume 71

New York, Saturday, May 12, 1928

Number 19

Tactics of the Ostrich Condemned by President Stevens

PRESIDENT STEVENS of the American Electric Railway Association strikes at the heart of the question, "What about the future of electric railways?" in an address made before the Southwestern Public Service Association at its Dallas meeting, and published elsewhere in this issue. All other questions regarding railways are secondary to this. The problems of financing, of modernization, of public relations, and the whole matter of management policy, are contingent upon satisfactory assurance that electric railway transportation is not to be supplanted.

There must, of course, be some form of speedy and convenient transportation in modern communities. Otherwise the conduct of ordinary business would be impossible. There are only two alternatives; there must be either a responsible public transportation agency or the streets must be abandoned to individual vehicles. Obviously it is physically and economically impossible for each traveller to "roll his own," despite the predictions of some automobile manufacturers with more enthusiasm than knowledge of transportation matters. The vast majority of people cannot afford to spend so large a part of their income merely to get about in their daily travel. Furthermore, no city can afford to provide the street space needed, even if the public were able to buy and operate enough automobiles. The whole proposition is so ridiculous that no one who even pretended to recognize the facts would seriously entertain it for a moment.

Since there is a continuing, and in fact an increasing, need for public transportation, there still remains the question of whether this will be provided by buses or by electric cars. Each vehicle has its advantages and disadvantages. The bus has flexibility and low investment cost in its favor. The car has long life, lower operating cost, high carrying capacity and service reliability. The so-called "rubber urge" as a factor in transportation has been proved an invention of the fancy. Unless the bus offers something more than merely rubber tires, it has no greater appeal to the public than has the street car. As has been reiterated time after time in these columns, the bus has an important place in public transportation, but that is in providing preferred forms of service at higher fare levels and not in the duplication or replacement of street car service.

Many railway managements are putting buses in place of street cars because of one primary consideration—the lower investment involved in the purchase of buses than in the rebuilding of track. In some instances of low traffic density this point of view is justified. But in many others the real explanation for the reluctance to spend money in rail rehabilitation and the replacement of obsolete cars lies in the lack of confidence on the part of the railway managements themselves regarding the future of street railways.

President Stevens calls upon the industry to look facts in the face. True, electric railway riding has been decreasing. But what have the railways done to change this condition? Are they meeting modern transportation standards? Modernization is imperative if the decline in passengers is to be checked. There is at present a vicious circle. Failure to provide up-to-date service results in falling patronage, and that in turn causes railway managers to question the future of their own business.

The public of today demands more than mere utility. Beauty has become an important factor in the lives of the American people. A street car that merely runs is no longer satisfactory, even though the fare is low and the service regular. The esthetic factors of appearance, appointments and comfort and the practical one of absence of noise are as important to attract patronage as are the utilitarian factors of reliability and economy. Frequency of service is all-important, and President Stevens rightly points out that the field is still wide open for the car manufacturer who will provide a really attractive and easy riding four-wheel car seating approximately 40 passengers.

A Clearing House of Business Philosophy

THAT the United States Chamber of Commerce is one of the country's great organizations for the promotion of constructive thought and action, not only within business itself, but in the relations between business and the general public, was apparent at the annual meeting held in Washington during this past week. To public utility men, schooled in the philosophy of public service, the declaration by leaders in general business of a similar doctrine of public accountability is indeed significant.

This new note in general business thinking was perhaps sounded most clearly by Judge Edwin B. Parker, chairman of the board of directors of the National Chamber, in an address at the close of the general session on Tuesday morning. Business has a responsibility above that of making a profit, according to Judge Parker. The method of the making is of importance not only to the general public but to business itself. Continued growth and development of business are dependent on the retention of its good name, and the road to avoiding restrictive public interference is through self-regulation. "The profession of business" is an expression used repeatedly by Judge Parker, which characterizes this new-day recognition of the importance of a professional code in trade and industry.

Utility men will find little difficulty in indorsing heartily this kind of thinking. Recognition of public accountability came to transportation men, particularly, out of the hard school of experience. How significant is it, therefore, that general business today voices its recognition of a similar responsibility to the public and that its spokesmen warn against the perils of a "public-

be-damned" attitude and advocate that business men and business associations condemn and cast out of their ranks those who put expediency and immediate profit ahead of fair dealing and a good name.

In the specific work of the Transportation and Communications Section there is much of direct interest to local transportation men. Under the able leadership of A. L. Humphrey a great public service is being performed. It is a credit to the vision of the local transportation industry that the American Electric Railway Association executive committee held its meeting in Washington during this past week, and that many railway executives from properties throughout the country attended and participated in the sessions of the National Chamber. Not only this national work, but also the activities of local chambers of commerce are deserving of active interest and participation by local transportation companies. "Teamwork in Business" was indeed a happy theme for this year's national meeting. It is exactly through that means—teamwork between electric railways and local business men—that the pressing problems of local transportation will be solved.

An Affiliation That Will Mean Much for the Industry

COMBINATION of the Stevens & Wood-Hodenpyl-Hardy interests in the Allied Power & Light Company, with R. P. Stevens as its president, has followed closely upon the recently announced merger of the Northern Ohio and Penn-Ohio systems. The financial details are still in the formative stage, but the facts so far made public indicate the extent of the holdings of the new company. These are recapitulated elsewhere in this issue. The magnitude of the railway properties is imposing. The achievements of Mr. Cobb, chairman of the Advisory Council of the A.E.R.A., in transportation are well known, just as are the achievements of Mr. Stevens, now president of the American Electric Railway Association, and Mr. Sawyer, president of the association last year, now president of Stevens & Wood. The Grand Rapids Railway, included in the Hodenpyl-Hardy group of properties, was last year's Coffin Prize winner, and the Penn-Ohio system, under the direction of Stevens & Wood, was the Coffin Prize winner of 1926. These roads, by their very capture of the Coffin Award, are properties which on their own account stood out at the top in many things well done in a competition that has been unusually keen. Moreover, as a phase of their activity, particularly in the case of the Penn-Ohio company, the place of the bus in city, suburban and interurban service has been most definitely fixed. It so happens that a speech about the electric railways made by Mr. Stevens before the Southwestern Association appears elsewhere in this issue. That, of course, is a mere coincidence, but it does serve to make plain, as reiterated in other editorial comment, the progressive and militant attitude of the directing head of the new Allied Power & Light Company toward the electric railways. Since the interests now brought together have been in the forefront of those who have striven intelligently and to good purpose in the past with the electric railways included in the systems with which they have been identified, it is certain that the new affiliation will mean much for the industry as a whole.

Alongside of the Model T in the Ford Museum at Dearborn

NO LESS primitive than his model T is the street car so graciously presented by President Porter of the Brooklyn City Railroad to Henry Ford. It will be placed in the Ford Museum in Dearborn. If a car ever has qualms then this one must have sensed its supersession when Van Depoele, the trolley pioneer, installed his line on Jamaica Avenue, Brooklyn, back in the eighties. The car is redolent of the period just after the Civil War, of carpet bags and bombazine. Since it made its first run in 1868 and its last in 1897, it would be interesting to know how it accredited itself during the blizzard of March 12, 1888, the token by which all storms in New York have since been measured. Many persons remember the car's immediate successors even if they do not remember the car itself or its counterparts, which came into general use soon after the first Brooklyn line was established.

The Brooklyn car was in service long before Deacon Richardson had begun to function as president of the Atlantic Avenue Railroad in Brooklyn. And those who think that customer ownership is something new may mark well that stock of the Brooklyn City Railroad of \$10 par was sold from door to door and is still of that par value. During the 75 years since the car was first run the Brooklyn City Railroad has never been in receivership or been reorganized. That is another record in street railway, railroad or general corporation finance. The car that now goes to Dearborn was a model in its day, just as are the cars in use on the Brooklyn City Railroad lines at present. It well deserves the place it has attained at Dearborn. It is not so ancient, but it is an antique and a relic.

Are We Treating the Employment Question Scientifically?

MOST American electric railway companies report a much lower labor turnover than formerly. At one time, an electric railway job was looked on by many employees as a sort of stop-gap, to be held until something better was available. With automatic equipment which reduces the physical labor of car operation and with the more congested streets of the present time which call for greater mental alertness, men of higher grade are seeking transportation employment. Comparatively high wages, group insurance paid for by the company, other benefits which add to the wages actually paid, together with reasonable guarantee of continuous employment—all are inducements which attract these men and keep them satisfied with their jobs.

With this difference in labor conditions, the present is a good time for railways to consider whether they are exercising as much care as they might to engage men who are especially adapted to electric railway work. When the labor turnover was high and only ordinary intelligence was needed on the car platform, no great precautions were necessary in this respect. With the time and money now spent by the average company to train a man as platform operator, a different condition prevails. If he later proves unable to perform the duties of his position, the time and money spent in this training are lost. It is almost, if not quite, as important to the applicant himself to be rejected early rather than after

spending a month or more trying to learn how to do something for which he is naturally unfitted.

The use of psychological tests of applicants for employment is the logical answer to this problem. Up to the time of the war, when tests of this kind were given to Army recruits, their value here was hardly understood. Even now, only few companies have psychological tests applied by their employment departments. European electric railway companies have done much more in this direction, and their efforts have brought prompt monetary return. Not only is there an increase in the proportion of men who remain permanently in service from among those accepted, but there has been a noticeable decrease in accidents and economies in other directions. As explained in an article in last week's issue, the tests have been applied to conductors and shop men, as well as to motormen.

Few companies do their purchasing of materials except by specification, checked by test, but many do not consider it necessary to adopt scientific methods in selecting employees. A casual talk and the "once over" by the employment agent are considered all that is necessary for applicants who pass the medical examination and have sufficient education to fill out an application blank. But there is nothing so deceptive as the idea that a man's qualifications for a particular job can be told from his appearance alone. Companies which have applied psychological principles to the selection of new employees report themselves satisfied that the method pays. This being so, it should be worth careful consideration.

Platitudes Put in Practice Pay Profits

SO MANY things contained in the report of the Cincinnati, Hamilton & Dayton Railway for 1927 deserve commendation that it is necessary to proceed cautiously lest comment become a mere reiteration of the contents of the report. It was the first full year of operation of the rehabilitated road. Business was bad in the Miami Valley last year, just how bad the report makes plain. Despite this, the passenger revenues of the interurban line in 1927 were 2.1 per cent in excess of those of the preceding year, while the total tons of freight handled were 26.2 per cent in excess of the 1926 tonnage, and freight revenues 23.2 per cent greater in 1927 than in 1926. Even the Dayton city lines responded to improved equipment with an increase in patronage. Costs per car-mile were cut, a saving was made in the bill for power, and maintenance expense was reduced.

These economies were incidental, however, to the larger program of intensive development. The record made was achieved by a dynamic attitude that appraised at its full worth the results likely to follow the provision of more frequent, comfortable, attractive and rapid service, by selling the service to the car rider and freight shipper through modern methods of publicity and solicitation and the development of new types of service to meet changed economic conditions. Reduced thus to their simplest terms, these sound like platitudes. Many people will dismiss them as such, because the imagination is lacking to translate them into boxes of freight, crowds attending a fair, theater parties and the mass of people at all times susceptible to exceptional service sold intensively. It is not to be expected that the achievements of the road in 1927 can be made cumulative, but it remains a fact that the Cincinnati, Hamilton & Dayton Railway was not con-

verted from a decrepit, obsolete broken-down property to one of the most modern of its kind in the country by the practice of legerdemain. That result was achieved by vision that correctly appraised the possibilities, followed by an immense amount of hard work and constant vigilance.

Make It Easy for the Passenger to Pay

NOT always have we had a buyer's market for local transportation service, such as exists today. Years ago it was a seller's market. Then people had no automobiles of their own and the public transportation agencies had a virtual monopoly. But those days are gone forever. Nowadays we must make it as easy as possible for the customer to buy our wares. One of the most important factors in successful merchandising is to make it easy for the customer to pay for his purchase. Merchants sometimes do this through encouraging buying by partial-payment plans and charge accounts. Obviously, these ideas are impracticable in selling transportation service. But every operating company can and should use a system of fares and fare collection that makes payment simple and easy for the passenger.

With the practical disappearance of the nickel as a unit of fare the situation has become worse. Although more than 200 cities now have a 10-cent cash fare, in all but seven of them there is also a reduced-rate ticket or token fare used by the great majority of passengers. Since the fare itself cannot be adjusted merely to facilitate payment, the transportation agencies must take advantage of every possible means of making it easy to pay the rate which has been fixed.

No general rule can be laid down concerning the best way to do this. Use of tickets or tokens, however, is undoubtedly easier than payment by cash when the latter involves several coins. When tickets or tokens are used, nothing should be left undone to make it easy for the passengers to buy them. A large railway which formerly sold four tokens for 30 cents but refused to sell two for 15 cents, furnishes a shining example of what not to do.

Real salesmanship does not place on the passenger the responsibility for having the correct fare, but rather tries energetically to help him to have it. In regard to methods of fare payment, the electric railways in this country can profit by the example of those abroad. In Europe, where zone fares are the rule, the problem is exceedingly complex as compared with that in the United States. Nevertheless the operating companies have gone far to overcome the handicap by developing methods of change-making, ticket-issuing and fare collection. These have been worked out so well that the exacting requirements are met without confusion or delay. Among the interesting developments of this kind are the automatic change-making and ticket-selling machines used in London, recently described in this paper. With certain modifications similar devices would undoubtedly prove useful on electric railways in the United States using stations or prepayment areas. Making change is a requirement on all systems, and selling tickets or tokens on many of them. Whatever can be done to facilitate or expedite the process will improve the service and please the patrons.

The Future of Electric Railways Is No Longer in Question

By R. P. Stevens

President American Electric Railway Association

IT SEEMS to me that no matter how many of the details of our business we discuss, there is one major question before us. It is in the minds of the men in the shops and on the cars; in the minds of the executives administering the companies' affairs; in the minds of those to whom we must turn for financing; and, to a lesser degree, in the minds of the car riders. The question is: "What is the future of the street railways?"

Are we what we have so vigorously proclaimed ourselves to be, an essential, vital, absolutely necessary and therefore a permanent, continuing industry? Or are we emulating the ostrich in its foolish habit of burying its head in the sand, and shutting off from our vision inevitable and unescapable facts bearing down upon us with overwhelming force? It is an important question, not only to us, but to the public.

First, why does the question arise? The answer to this is simple—it arises because some 20,000,000 private automobiles are being operated in the United States and because there will be an increase in this number for at least several years. These private automobiles have taken a considerable part of the traffic which otherwise would have been carried in street cars. The question of the future of electric railways is also kept before us by the heated argument going on within our ranks between the old stand-patters and the bus-acclaiming element. This is unfortunate—it reminds me of a young boy, who, hearing two cats in a terrible rumpus in the back yard, said to his father, "I guess those cats are tearing each other to pieces." "No, son," replied his father, "they're just getting better acquainted." So with the bus controversy. It has cost us millions of dollars to learn—and that only recently—the economic limitations as well as the advantages of the bus in handling public transportation business.

The question arises also because of the occasional abandonments of small street railway systems that never had any economic justification. For example, not long ago it was heralded all over the United States that "the last street railway company in Nevada" had ceased operating. The public could not be expected to know that there never had been more than one street railway in Nevada, and that that company never operated more than $7\frac{1}{2}$ miles of track or had more than six cars. Yet that inconsequential abandonment inspired many comments in the public press that added to the public's uncertainty as to the permanence of our industry. A large section of the public has acquired the notion that the street car has outlived its usefulness. There is a very difficult

PRESIDENT STEVENS here throws aside details and strikes at the fundamental question of the future of the electric railway industry. His views, presented at the recent meeting of the Southwestern Public Service Association in Dallas, Tex., express confidence in the industry's outlook. He holds that the outstanding problem of public transportation companies is that of keeping abreast of the times.

psychological problem to be met, but it is being met, and in due time the erroneous ideas which have gained currency will be eradicated and supplanted by the only thing that can supplant them—the truth. There has been too much jumping at conclusions with respect to the electric railway situation, and not enough analysis of the facts.

I remember a friend of mine who once said "My wife is a great athlete—in fact, she holds the world's record for jumping at conclusions." So with many of those who would relegate electric railways to the scrap heap. Let us survey the situation. Most of you attended the A.E.R.A. convention in Cleveland last October. You saw the largest exhibit of rolling stock ever displayed at an electric railway gathering. You saw new types of cars, new kinds of trucks, new kinds of seats, new designs, new methods of maintenance of equipment and tracks. You saw new types of buses, too, and many of you joined in singing what might be called the chorus of the convention—"The bus men are making the buses look like street cars and the street car men are making the cars look like buses."

And that is more or less true. The electric railway engineer has taken ideas from the automotive engineer, and the bus man has profited by the experience of the electric railway engineer. That the bus manufacturer is adopting ideas from the street car is not surprising to experienced electric railway operators. Nor is it difficult to understand why the car builder is making his vehicle look more like a bus. The reason is largely psychological. The automotive vehicle is new; it is sleek and speedy looking; it impresses the public as being "modern," while the street car has been a more or less standardized vehicle making no appeal to the unvoiced, but none the less real, desire of the public for "class" and "up-to-dateness" in public transportation as well as in clothing, home environment and entertainment. There are evidences every day of a great influence which beauty is exerting upon American industry and business, and in the lives of the

American people. We see this every day and must meet it as any other business man would. A shrewd merchant carries the goods his customers want. Our customers, the present-day Americans, want beauty in their transportation vehicles as well as in their homes and home furnishings.

Why do people turn in automobiles a year old for new ones with more artistic lines? Why are the symphonies and classical music becoming more popular every year? Why did Henry Ford spend a huge fortune in making "Lizzy" look more artistic, and why do they pay the General Motors designer more than they do the President? The growing influence of the appeal of beauty, as the artist knows it, is on every hand. One characteristic of the American people is that they want to skate in summer and swim in winter. They want something different—and they want it now. Let's give them what they want in transportation.

Hence the new designs of street cars, while incorporating electrical and mechanical innovations to give more efficient performance, also tend toward greater beauty of lines and appointments—toward more "class." It is the public's verdict. Not only must we have efficient vehicles, but we must make them look up to date. We are in the bobbed-hair, silk-stocking, short-skirt era. It will not do to continue offering the public street cars that remind it of bustles and dragging skirts, with shot sewn in the hems lest a vagrant breeze expose a cotton stocking and a petticoat. These things smack of antiquity, and the public refuses to be old-fashioned.

KEEPING IN STYLE

It may be true that the old cars and the old garments were sturdy, substantial, serviceable goods, but that does not dispel the fact that they are reminiscent of pre-flapper days. Being out of style, the public considers them as no longer useful. It will do us no good to regret this fact; we have to deal with conditions as we find them—not as we might like to have them. Therefore we are trying to build modern-looking cars, as well as cars equipped with modern mechanical devices that improve service. None of us wants to go back to the skin and bones type of single-truck safety car; but there is an opportunity for the car builder to develop a small car that can be as luxurious as the big fellows and that can be operated on a "car-in-sight" basis.

Where are we heading in buses? In January, 1921, sixteen electric railways were operating 23 buses on 35 miles of route. By October, 1927, *Aera* reported that 367 electric railways were operating 8,350 motor buses on 16,722 miles of route. During all these years of phenomenal expansion, the great majority of electric railways operating buses have reported that the bus routes failed to make money. The expansion of a losing business is rather paradoxical, but it can be explained on several grounds—some valid, some invalid. The most valid ground for these extensions is that many of them are "stop-loss" or, more accurately, "less-loss" operations. They were made to avoid the high capital investment and charges for new foundations, track and paving in districts with little present or prospective business. There are also many installations that were made because of the fear of competition. Such installations are regrettable because they suggest that the public was not properly informed as to the facts of transportation service.

Some bus installations resulted from a strong sense of obligation. It seemed so natural to run a route through this or that suburban area; and so easy to do

it. Unfortunately, however, it costs quite an "out of pocket" charge just to keep the buses going. Once started, they become part of an established city-wide transportation system and therefore cannot be withdrawn with the easy grace shown by the independent operator who was frequently responsible for creating the public demand for bus service.

"RUBBER URGE" HAS PROVED NONSENSE

The truth is that the industry was overwhelmed for a time by the so-called "rubber urge." Steel wheels, we were told, were out of date. The pleasure of the personal car was confused with the service that would be rendered by a public utility vehicle—the bus—running on rubber tires. Bus salesmen first made themselves believe, and then they made the bus buyer believe, that automobile owners who had deserted the trolley car would be drawn back by the bus. This has proved sheer nonsense. Ten minutes are ten minutes, whether one is waiting for a trolley car or for a motor bus; and if you don't want to wait ten minutes, you ride on neither. The present bus situation is not economically sound—it cannot endure—it will be sifted until the bus finds its proper level, and that is not, except in small measure, in the class of service offered by the street car. Think, for instance, of the many places in the country where the street railways—that don't use the pavement—pay for the cost of the paving, and the buses—that do use it—pay no such proportionate cost. Many of those who predict that buses are destined to replace street cars, overlook this ridiculous situation. Is it reasonable to believe that the public would remain blind to the facts if buses were to replace cars on any such scale as has been predicted by some enthusiasts?

One case is especially ironical—where they do make a pavement charge for buses. The irony of it is that those buses are operated by the street railway company. I have in mind the city of Baltimore, Md., where the company is paving for the cost of the paving three times: first, by bearing its proportion of the city taxes; second, by paying the cost of maintaining the paving; and, third, the paying tax of the bus. Can this situation continue? Why, of course not—and, as this unreasonable state of affairs becomes adjusted, the bus may be expected to assume its proper place as a high-fare, preferred type of service vehicle and not as a mass transportation agency.

That not all bus men have come to a realization of the full responsibilities of a public transportation purveyor is revealed by the recent remarks of one leader in that field. He criticized adversely the policy of running a bus route throughout the day when only two or four trips a day were self-supporting. Independent operators did not do things that way; that was why they prospered. It is quite true that the electric railway men's concept of transportation service is to keep something on the move all day long. One trip in the morning and one trip at night does not meet the responsibility of a mass transportation system.

The public expects steady service from the organization that it associates with steady service. Not many electric railways would be permitted to operate on the "now and then" basis maintained by the independent bus man who takes his bus home to lunch with him and snatches a nap on the parlor sofa until it is time to make another profitable run.

By this time we know that the public is more interested in frequency and speed than in whether it rides in a car or bus. If we profit from our own experience and

that of others, we will be able to turn many a present bus loss into a bus profit through nothing more startling than the use of smaller buses at proper rates of fares.

We are taking a saner, more realistic view of the bus question. We have stopped deluding ourselves about a mystic rubber urge, but are figuring closely what business we are likely to get and how much service we can give with the most economical vehicle. The bus no longer represents a serious problem. It has been adequately demonstrated that it must be intelligently coordinated with existing transportation agencies.

The private automobile constitutes our most serious problem, but the very number of automobiles that attempt to use the streets is forcing a more intelligent allotment of street space. Our large cities are abolishing parking in the congested districts. The use of the public streets for all-day storage of private vehicles cannot be permitted forever in any of our cities. For one thing, it is too costly—street space is worth \$10,000 a square foot in some of our cities. For another, it prevents the streets from serving their purpose, that is, from being avenues for the movement of traffic. For still another, medical authorities are beginning to express concern about the contamination of the atmosphere in city streets by the exhaust of innumerable automobiles.

Street congestion is causing the public to turn again to the street car. Witness the situation in Cincinnati, for instance, where street car traffic increased 7,500,000 passengers in 1927 as compared to 1926. Witness conditions in almost any medium-size city, where the newspapers a few years ago were declaring that the day of the street car was gone, but where they now are objecting to the discontinuance or curtailment of street car service and are declaring, quite properly, that the services rendered by the electric railways are necessary, essential, indispensable.

There is still another important indication that the private automobile has about reached its maximum as a destroyer of electric railway traffic, and that is the fact that the manufacturers admit that most of the vehicles they sell are for replacement of worn-out cars. Such a condition indicates the approach of the saturation point, which in the past was regarded as mythical. Another straw pointing the way of the wind is the price cutting which is going on in the private car industry. Price cutting means just one thing—that sales resistance is increasing, and it is increasing, in the opinion of many students of current conditions, chiefly because nearly everybody who can afford an automobile already has one.

So it seems to me there is good ground for optimism in this electric railway industry of ours. There is no ground for self-complacency, for unwise over-confidence, however. The automobile has taught the public that it is possible to move swiftly, comfortably and conveniently, and a public accustomed to that kind of transportation will not desert it for something less convenient and less

attractive. That is why the whole electric railway industry today is concentrating on modernization, not only modernization of equipment but also of attitude of mind toward the service.

There is a very definite and pronounced favorable trend on the part of the public toward electric railway transportation, but in all too many communities there is still the lack of realization that to grow and prosper every community must have public mass transportation facilities. It is up to us to bring this fact home to the people. It is our fault if they do not know it. I believe more effort should be made to bring home to communities an adequate realization of the predicament they would be in if they were deprived of electric railway transportation, as some surely will be unless authorities co-operate more fully. We can expect this co-operation only when it is backed by the people of the community.

I make this statement advisedly. Its truth has been taught by that sternest of teachers, experience. Phoenix, Ariz., with 26,000 people, found that electric railway transportation could not be dispensed with. The city, itself, was obliged to furnish it. Look at Ashtabula, Ohio; at Athol, Mass., with only 10,000 people; at Greenfield in the same state, with only 15,500; and a great many others. There are many in-

stances of cities, not only of medium size but small cities as well, that after trying to get along without street railway transportation found themselves compelled to provide these facilities at the city's expense and at a cost invariably greater than under private operation.

The trend toward higher fares has been definite, but this is only one of the many ways communities can co-operate to provide better transportation facilities. I refer to such measures as relief from indirect taxes on the car riders and unnecessary service requirements founded upon custom and practices of the past, which have no reason for existence now, if they ever had.

Not the least of the handicaps that the cities can remove are traffic rules which hinder electric car operation and cut down speed. Refusal or failure of city authorities to help provide faster schedules is a short-sighted policy most frequently encountered today, especially in the smaller and medium-sized cities. In congestion, a street car goes as fast as the traffic—that is all that the automobile can do—so why permit the automobile, carrying an average of 1.8 passengers, to slow down street traffic and cars carrying 50 or more passengers?

Much more could be said to prove that mass transportation will continue to be handled by the electric railways until some other form of transportation not now known is invented to take its place. Our problem is to keep abreast of the times. We have the brains, the will, the energy and the desire to keep our industry abreast of the exacting requirements of the public, and to do so at a profit. Let's go.

Our Problem

MASS TRANSPORTATION will continue to be handled by the electric railways until some other form of transportation not now known is invented to take its place. Our problem is to keep abreast of the times. We have the brains, the will, the energy and the desire to keep our industry abreast of the exacting requirements of the public, and to do so at a profit. Let's go.

—R. P. STEVENS.



Members of the Cleveland Railway chorus and officials en route to Pittsburgh to broadcast from radio station KDKA. The news of this was published in this paper for April 14

Cleveland Personnel Department Organized to Improve Employee Morale

Welfare, accident prevention and employment divisions of department are working toward merchandising of transportation through better trained employees. New retirement and benefit insurance plans reduce labor turnover

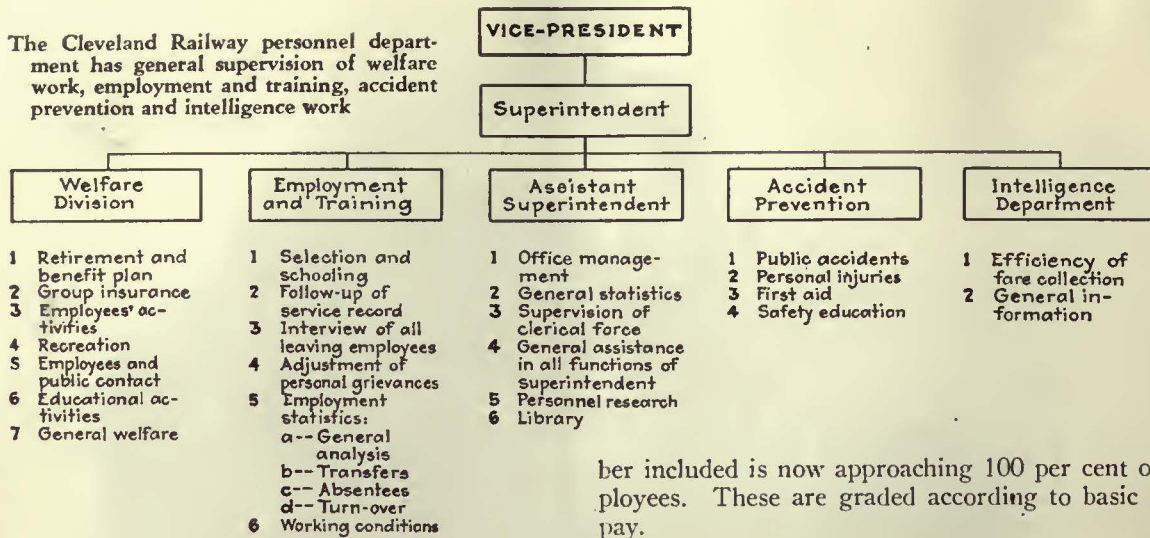
WITH the organization of a complete personnel department on July 1, 1927, the Cleveland Railway has carried forward its policy of perfecting its own organization in the interest of better public relations. This move was made at the same time a retirement and benefit insurance plan was announced to the employees of the company. It is believed that the closer contact between the management and the great body of its employees, through which the men in the ranks may be given a clear understanding of all the policies and ideals of the company, will in great measure bring improvement of public relations, success in safety work and general efficiency in conducting the affairs of the road.

The organization chart on page 768 indicates that all the activities of the personnel department bear a close relationship to one another and that employee relations and public relations are considered inseparable. Improvement of public relations through contact with employees is divided into two phases: (1) Giving the employee complete understanding of his task; (2) creation of company prestige as a background for the work of all employees.

A "contact club" has been organized and a code of regulations prepared. Those employees who are entitled to membership in a "25-year service club" have been listed. Several general office employees are attending a training course conducted by the Cleveland Recreational Council in order to receive instruction in the management of social games and activities. The organization of athletic teams at various division headquarters is being encouraged, and athletic equipment is provided at cost wherever possible. A chorus has been formed and is rehearsing an oratorio which will be sung publicly in the Cleveland Masonic Auditorium on May 31. An orchestra has been organized in the motor coach department and already has contributed to programs of social gatherings of the different divisions.

The Cleveland Railway is spending about 4 per cent of its payroll to provide a pension accrual for its employees. The company's employees have available now not only the recently adopted retirement and benefit plan which, for brevity, is referred to as the Metropolitan plan, but also receive the benefit of group life insurance placed with the Travelers' Insurance Company. Since

The Cleveland Railway personnel department has general supervision of welfare work, employment and training, accident prevention and intelligence work



July 1, 1927, further group insurance benefits have been made available. These include an additional \$500 in group life insurance, accidental death and dismemberment insurance, sick and accident benefits, and definite retirement benefits. All these are handled on a co-operative basis. The deposits of the employees go toward payment of premiums from Aug. 1, 1927. The benefits now available include group life, the Metropolitan benefits, and state compensation in the event of occupational death. They are shown in an accompanying tabulation. In this are listed the amounts that would be received by beneficiaries of employees in the event of death after various periods of service. The maximum group life insurance is paid after a minimum of eleven years of employment.

RETIREMENT AND BENEFIT PLAN POPULAR

The retirement and benefit plan, underwritten by the Metropolitan Life Insurance Company, was accepted by 90 per cent of the 5,000 employees 48 hours after its announcement. In less than one week more than 95 per cent had signed their application cards. The total num-

ber included is now approaching 100 per cent of all employees. These are graded according to basic salary or pay.

Class B employees constitute more than 80 per cent of the total, and hence are taken to illustrate the work-

TABLE I—INSURANCE PROTECTION OF EMPLOYEES OF CLEVELAND RAILWAY

Years of Service	Total Amounts Paid			Beneficiaries	Annual Cost to Employee (See Note)
	Natural Death	Non-Occupational Accidental Death	Occupational Accidental Death		
1	\$1,250	\$3,250	\$9,750		\$4.80
2	1,500	3,500	10,000		4.80
3	1,600	3,600	10,100		4.80
4	1,700	3,700	10,200		4.80
5	1,800	3,800	10,300		4.80
6	1,900	3,900	10,400		4.80
7	2,000	4,000	10,500		4.80
8	2,100	4,100	10,600		4.80
9	2,200	4,200	10,700		4.80
10	2,300	4,300	10,800		4.80
11 or more	2,400	4,400	10,900		4.80
	2,500	4,500	11,000		4.80

Note—The above figures apply for those listed in the Metropolitan plan as Class B employees, who pay \$2.50 per month. Of this amount only 40 cents purchases insurance for accidental death, while the balance of \$2.10 purchases health and accident insurance and pension accrual, which, at the age of 65, and for 25 years of service, amounts to interest at 6 per cent on \$10,000. The total insurance shown above includes the Travelers' group life and the state compensation, inasmuch as the employee will practically conceive that he is receiving all of the benefits for his contribution. Technically, the amounts shown are received for \$4.80 a year, or it may be said the benefits indicated, plus pension accruals and health and accident protection to the amount of \$20 a week, are received for a total cost of \$30 per year.



Fourteen Cleveland Railway employees who have a combined service of 667 years, an average of 47 years each

ings of the plan. All active Class B employees, for a monthly contribution of \$2.50, receive:

1. \$500 additional group life insurance (the Cleveland Railway paying the entire cost).
2. \$2,000 accidental death and dismemberment insurance.
3. \$20 weekly sick benefits.
4. \$20 weekly accident benefits (non-occupational).
5. Monthly retirement benefits for life, commencing at age of 65 after 25 years of service, in amount of \$2 per month for each year of service up to retirement.
6. Monthly disability retirement benefits, provided at least twenty years of service have been completed, in amount of \$2 per month for every year of service up to disability.

Approximately 100 employees of the Cleveland Rail-



The girl's basketball team is another of the organizations fostered by the company

way had attained an age of 65 on July 1, 1927, with 25 or more years of service to their credit and, therefore, were eligible for pension. A total of 85 of these men have since been pensioned. In the period between July 1, 1927, and Jan. 1, 1928, 266 employees received benefits on account of illness or accident.

EMPLOYEES PARTICIPATE IN ADMINISTRATION OF BENEFITS

While the administration of the group life insurance rests with the welfare division of the personnel department, the Metropolitan plan represents a co-operative effort between the trainmen and the Cleveland Railway. Therefore, it was found desirable to have a joint administration by the members and the company. This was done through the creation of a general committee and an advisory committee. The general committee is elected by ballot by the members within the six major departments. In determining the choice of individuals for this committee two elections are held, one primary and the other final. At the latter election votes are cast upon the two employees receiving the highest number of votes in the primaries.

The general committee attends to routine administrative matters, especially as they involve the different de-

TABLE II—SALARY BASES FOR DETERMINING DUES FOR PARTICIPATION IN BENEFIT PLANS OF CLEVELAND RAILWAY

Class	Annual Basic Rate of Salary or Pay	Amount of Monthly Dues
A	\$1,500 and under	\$1.50
B	1,501 to 2,100	2.50
C	2,100 to 2,700	3.50
D	2,701 to 4,500	4.50
E	4,501 and over	6.00

TABLE III—AGES OF EMPLOYEES MAKING HEALTH CLAIMS, OCT. 30-DEC. 3, 1927

Age, Years	Number of Claims	Age, Years	Number of Claims
20-25	5	50-55	9
25-30	10	55-60	10
30-35	18	60-65	9
35-40	15	65-70	3
40-45	11	70-75	1
45-50	10		
Total			101

TABLE IV—EMPLOYMENT STATISTICS, MONTH OF NOVEMBER, 1927

	Motormen		Conductors		Total Trainmen	Coach Operators
	City	Inter-urban	City	Inter-urban		
Applications received	0	0	1	0	1	25
Assigned to training school	0	0	0	0	0	29
Reinstated	1	0	0	0	1	0
Employees resigned	4	0	6	0	10	0
discharged	0	0	0	0	0	2
died	2	0	0	0	2	0
pensioned during month	2	0	0	0	2	0
failed to complete training	0	0	1	0	1	0
Total trainmen and coach operators leaving the service	8	0	7	0	15	2
	Motormen		Conductors		Total Trainmen	Coach Operators
	1926	1927	1926	1927	1926	1927
Total number of employees in service, month of November	1,538	1,397	1,428	1,376	2,966	2,773
					198	207

partments which the committeemen represent, and carries into effect the regulations prescribed by the advisory committee. The latter committee consists of the chairmen of the six major department committees and six members who are appointed by the president of the railway. The appointed members include the vice-president and general manager, the superintendent of personnel, the auditor and the chief surgeon. From this membership are elected a chairman and a secretary. The advisory committee members hold office for one year, or until their successors are chosen. This committee's duties are to supervise the working of the retirement and benefit plan and to assist and advise the general committee.

Membership in the retirement and benefit plan consists of five classes, which are determined in accordance with the yearly salary or wages. Any regular employee of the Cleveland Railway who has been continuously employed for six months or more is eligible. The dues are deducted monthly by the company from the pay of each member. In the event of death there is paid to the beneficiary the amount of group life insurance then in effect on the life of the insured. If death occurs accidentally, additional insurance is paid.

NOTABLE DECREASE IN LABOR TURNOVER

It is interesting to note what has been accomplished in the comparatively short time the personnel department has been functioning, not alone as regards the work of the welfare division, but also with respect to employment. There has been a notable decrease in labor turnover. The advantages of the retirement and benefit plan naturally were not felt until some time after the announcement of the plan, which was on July 18. Accord-

ingly the results for the latter months of the year are the better measures of its effect on labor turnover.

Accident prevention is another phase of the personnel department's work in Cleveland. The accident prevention division, which was actually functioning before the organization of the personnel department on July 1, was subsequently included as a division of that department. During the latter months of 1927 there was a notable reduction in accidents. The 1,081 accidents reported by the stations for November are 41 less than occurred in the previous month, and 266 less than in November of the year previous.

Throughout the Cleveland Railway organization there has been growing an appreciation of the value of the personnel department's work. Special effort is being made to keep employees advised of definite instances where the welfare division has been of general assistance to the company's men. All this is predicated upon the idea that the development of a contented and efficient body of employees is contingent on keeping them in the best of health and free from mental worries.

Novel Merchandising Method Employed by I. C. & E.

IN SOLVING the problem of how to present most effectively direct information to various traffic groups, civic organizations and large freight shippers of Dayton, Ohio, William R. Huffer, traffic manager Indiana, Columbus & Eastern Traction Company, developed a novel merchandising idea. His plan is to bring before the shippers a picture of the company's service, and for this purpose he has invented "A Sample Case of Electric Railways." The method of using the sample case to bring the information before the shipper is well organized and effective.

Having in mind the personal contact wherever possible in their sales activities, the I. C. & E. traffic men utilize the telephone for appointments with shippers. Conversa-

tion is brief and to the point, stressing the idea that within the short interval of seven minutes time the contents of an electric railway sample case may be displayed to the mutual advantage of both shipper and carrier.

Promptly at the appointed time, the I. C. & E. representative arrives, carrying a neat, compact case whose appearance harmonizes with the best of office equipment. Proceeding without unnecessary delay, he places the case on an office desk or chair. The plush-lined lid is opened downward, revealing a colored beaverboard map showing the electric railway service via the I. C. & E. lines to and from Dayton, Ohio. A total of 40 miniature electric lamps locate the cities on the map, indicating first, second and third morning service according to the colors of the electric lamps, which are red, green and orange, respectively. Dayton, Ohio, the point of orientation, is indicated by a white lamp. A small three-pole electric switch is located in the upper right-hand corner of the map. Placing himself convenient to this, and lighting the single white lamp indicating Dayton, Ohio, the representative begins his talk.

The sample case was built for use of traffic men at Dayton only. However, the maps, as may be constructed for use in other districts, are interchangeable. Thus with a series of the beaverboard maps, properly wired to illuminate the electric lamps, indicating first, second or third day delivery to and from other districts in the territory, the company would be in a position to use the sample case at any point for demonstration.

Dimensions of the case when closed are $41\frac{1}{2} \times 27 \times 7$ in. It is made of strong light-weight wood covered with Pantasote. It has brass fittings and a leather carrying handle. The map frame is of mahogany and the lid and inside are lined with green plush. A three-pole automatic switch control for the lamps is located in one of the upper corners, convenient for the operator. Electric railway lines on the beaverboard map are painted in red, stations are named in black, and lakes and rivers are in blue. The map is hinged at the bottom so that the wiring and battery compartments in the rear of the case can be easily reached. Dry cell batteries furnish current for illuminating the 41 small lamps.



At left—Closed case being carried into a business house for demonstration. Dimensions of the case thus closed are $41\frac{1}{2} \times 27 \times 7$ in. At right—Actual demonstration of the sample case. By lighting the three series of lamps, the demonstrator indicates the points of first, second and third morning service, respectively

Model Municipal Traffic Ordinance Proposed

Many provisions directly affecting the operation of street cars and buses are included in the tentative draft prepared by a committee of the National Conference on Street and Highway Safety

SUPPLEMENTING the uniform vehicle code approved by the National Conference on Street and Highway Safety at its meeting in 1926, a tentative draft of a model municipal traffic ordinance has now been prepared by a committee appointed for this purpose by Secretary of Commerce Hoover. This model ordinance covers such purely local matters as the authority of local police in the direction and control of traffic, the erection of necessary signs and signals, parking regulations, special rules for the protection of pedestrians and certain driving rules peculiarly necessary on city streets. Many of these provisions directly affect the operation of street cars and buses.

During the past summer and fall the committee carried on preliminary work, including an analysis of the traffic ordinances of 100 American cities together with the model ordinances existing in several states and a study of the subject matter appropriate for an ordinance adaptable to the needs of municipalities throughout the country. At a meeting in Washington Dec. 7-10 the committee developed this material into a preliminary draft. This has since been further revised by the committee and put into tentative form for criticism and comment.

It is recommended by the committee that the regulations be as simple and few in number as possible and that they be reasonably designed to increase safety and at the same time facilitate the movement of traffic. It is believed that reasonable regulations so designed will command respect and will, to a large extent, be self-enforcing. On the other hand, unreasonable or unduly restrictive measures arouse resentment and invite disobedience and cannot be enforced by an army of traffic officers.

OFFICIAL TRAFFIC SIGNS NEEDED

When a municipality adopts and proceeds to enforce even the simplest traffic ordinance, it is impossible for the public to bear in mind all of the regulations with reference to parking and other matters, and the necessity is apparent for the erection of signs and signals and the placing of markings to give immediate and constant notice of regulations. There is need for such indications as parking time limits, places where parking is prohibited, and through streets at the entrances to which stops are required—not merely for the benefit of residents of the locality but to give notice to visitors in the community.

It is highly desirable that all official traffic signs and signals erected under the ordinance be uniform as far as practicable for particular purposes throughout the city. It is also desirable that they be standardized and conform as far as possible with those of other municipalities.

When every municipality adopts the same general system of signs, markings and signals, the motor tourist as well as the pedestrian visitor will readily recognize and may be expected to observe the regulations in whatever municipality he may find himself. It is recommended, therefore, that the City Council or other local authority, when determining the character of official traffic signs and signals, give careful consideration to and if possible adopt the standard system of signs recently recommended by the American Engineering Council, which was prepared by a committee appointed by that body at the request of the National Conference on Street and Highway Safety.

TRAFFIC CONTROL SIGNALS DISCUSSED

The utility of traffic control signals depends primarily upon the judgment with which they are installed and operated. In considering traffic signals it should always be remembered that they stop as well as pass traffic, and municipalities may well proceed slowly and act only upon definite traffic analyses. Signals should be installed only at those intersections where there is a real need for them and where they will be of real benefit, for either or both of the following reasons: (1) Where the volume of traffic is so large as to prevent free movement, and traffic will be facilitated by such signals; (2) where they are needed to safeguard pedestrians. It should not be assumed, however, that every intersection where accidents occur necessarily requires a traffic signal; it may be that the hazard can be better removed by other means. Where not required for safety, signals should be installed only where it is reasonably certain that they will expedite rather than delay the traffic.

The report points out that the utility of a traffic signal depends upon the accuracy with which it is adjusted to traffic requirements. The progressive system is generally considered to be the most satisfactory. Its application to any particular street or district, however, requires careful engineering study of the amount and character of traffic and other conditions to insure proper location and timing of the signals. When so laid out the progressive system permits moving a greater volume of traffic, at a higher average speed, with greater safety, than any other.

At present the practice of cities and the opinion of traffic engineers are divided between the three-color and the two-color control systems, the former being subdivided into the "full amber," in which the amber is used at all changes, and the "split amber," in which the amber is used only following the green.

It is not now possible, the report states, to forecast which of these systems will eventually predominate. It is, however, very desirable and entirely practicable that

whichever system is used the color indications shall have standard meanings.

The total length of the cycle, as well as the division of the cycle between the two (or more) directions, should be determined by careful analysis of the traffic and other conditions. In general, a fairly short cycle is recommended—say 40 to 80 seconds for ordinary conditions. The use of cycles as long as three minutes, of which perhaps two minutes are devoted to one direction, encourages violation by both pedestrians and motorists and delays traffic. With a short cycle, the approaching motorist can so gage his speed, from a distance of one or two blocks, that he will reach the intersection on the "Go" signal and thus avoid having to stop at all.

The ordinance provides that all movements, including turning movements, shall ordinarily be made on the green light. In some cities right turns are permitted on the red as well as on the green light. Some of the ordinances permitting this require that before making the turn on the red light the driver shall first stop at the crosswalk, and shall make the turn with special regard for the safety of pedestrians and other vehicles. Others do not even require the preliminary stop. This practice is not recommended because it violates the standard significance of the red light.

PROTECTION OF PEDESTRIANS

One section of the ordinance authorizes the marking of crosswalks at intersections where there is particular danger to pedestrians crossing the roadway. Marked pedestrian crosswalks at intersections serve two purposes. They influence pedestrians to use such crosswalks and to avoid crossing roadways at other points. Also, a marked crosswalk serves to emphasize and to incite obedience on the part of drivers of vehicles to the recommended rule that vehicular travel shall yield the right of way to pedestrians crossing at intersections.

Although the ordinance advisedly makes no provision for pedestrian tunnels, it is recommended that every municipality having large vehicular movement upon its streets, with corresponding volume of pedestrian movement across streets, give consideration to the installation of pedestrian tunnels underneath roadways. Certain municipalities have constructed such tunnels adjacent to schools. The financial outlay has been returned many times in increased safety to school children and in facilitating vehicular travel on roadways. The routing of vehicular and pedestrian movement on different levels avoids conflict between such respective movements and is obviously more effective than any possible means of control of the two kinds of movement on the same level within the same area.

SAFETY ZONES RECOMMENDED

The placing of safety zones at street car stops has proved of the utmost value in the protection of persons boarding or alighting from street cars, and in speeding up street car loading. The movement of vehicular traffic past a standing street car is also facilitated. Safety zones, or isles of safety, placed in the centers of wide thoroughfares, have also been advantageous to pedestrians crossing such thoroughfares.

Safety zones in crosswalks are also desirable in or near the centers of wide roadways where there is heavy movement of both vehicles and pedestrians, to afford a place of refuge for pedestrians unable to get entirely across the street before the signal changes, and also for pedestrians at uncontrolled intersections.

One of the most dangerous conflicts between street cars and motor vehicles is to be found where vehicles pass street cars loading or unloading passengers. To permit this without regulation would create a great hazard for pedestrians. On the other hand, to entirely prohibit vehicles from passing any standing street car would unreasonably and unnecessarily hamper traffic flow. It is desirable that an effort be made to adjust these unwise extremes. The committee submits two alternative sections on this subject, the first taken verbatim from the uniform vehicle code, and a revised section which it recommends as tending to expedite traffic without increasing the hazard to street car passengers. The alternate section requires motorists to stop behind the nearest running board or door of a standing street car until passengers have boarded or reached a place of safety, except that where a safety zone has been established vehicles may proceed past a street car at a speed not greater than is reasonable or proper and with due caution for the safety of pedestrians.

STREET CAR OPERATION IN RELATION TO OTHER TRAFFIC

It is desirable that proper regulation prevent, so far as possible, conflict between street car and other vehicular traffic. Street car movement is, of course, limited to rails located in the street. This is one of the most important factors to be considered in adjusting the relationship between such cars and other vehicles. While it is recognized that street railway companies are not granted exclusive right to the use of a portion of a public street, nevertheless, motor vehicle operation should not be permitted to unduly interfere with the free use of the track area by street cars. The ordinance declares it unlawful for the operator of a vehicle proceeding immediately in front of a street car to fail to turn off the tracks as soon as practicable after signal from the operator of the street car.

STREET CARS AT INTERSECTIONS

In view of the difficulty in promptly stopping a street car, the ordinance declares that

"When a street car has started to cross an intersection, no operator shall drive upon the car tracks in front of the street car."

It is recommended that street cars be required to obey the "Stop" rule at through streets and traffic control signals at intersections. Numerous accidents have occurred by reason of fast movement of street cars proceeding in opposite directions and passing each other within street intersections. Operators of other vehicles observe and await the passage of a street car from one direction and upon proceeding across the intersection are struck by a rapidly approaching street car from the opposite direction.

Many street railway companies have regulations requiring motormen to exercise special caution on passing other street cars within intersections, and such regulations are highly desirable. Slowing down and ringing of a bell should be the minimum of precaution to be exercised under such circumstances.

DRIVING THROUGH SAFETY ZONES

The ordinance declares it unlawful for the operator of a vehicle at any time to drive the same over or through a safety zone. In some cities vehicles are permitted to drive through safety zones indicated only by markings when they are not occupied by pedestrians. The committee believes, however, that this practice is fraught with danger to pedestrians about to enter the zone, and

that it is unsafe to leave the matter to the discretion of the motorist.

The committee believes that municipal authorities and street railway companies should determine the location of street car stops in such places as to afford convenience to patrons and at the same time the least obstruction to other traffic. Particularly, street cars, whether operated singly or in trains, should not stop for the boarding or alighting of passengers at places where any part of the street car remains or extends into any street intersection.

BUS LINES AND TAXICABS INCLUDED

The proposed model traffic ordinance is by its terms applicable to all motor traffic, including public buses, taxicabs and hackneys operated on the public streets and highways. It is thought that all of the usual rules and regulations designed to facilitate the movement of traffic and to increase safety should apply to buses, taxicabs and hackneys.

STOPPING, STANDING AND PARKING

Present city traffic ordinances disclose a multitude of regulations with reference to stopping, standing and parking on city streets. Perhaps no phase of traffic regulation has occasioned more heated debate, irritation and violation of regulations than those pertaining to parking.

Public highways are required and dedicated primarily for purposes of public travel. However, the stopping and standing of a vehicle when the owner has reached his destination is a necessary incident to this proper use of the vehicle. In so far as the parking or stopping of vehicles adjacent to curbs does not seriously interfere with other uses of the roadway, such parking or stopping is advantageous. When it seriously interferes with the necessary use of street areas for moving vehicles it must give way to the primary use. Likewise, unlimited parking or dead storage of vehicles adjacent to curbs should not be allowed when this interferes with a greater need of the use of such area by a larger number of operators of vehicles desirous of stopping temporarily for purposes of loading or unloading. Also, parking or even stopping should be prohibited in certain areas where the mere presence of a standing vehicle occasions danger to users of the highway, or causes unreasonable interference with traffic movement.

STREET TERMINALS CONDEMNED

The subject of the use of streets by public carriers for terminal or switching purposes has received careful consideration by the committee, but because it was found that conditions were so radically different throughout the country it was thought inadvisable to incorporate in the ordinance a provision prohibiting such use. The committee believes, however, that the use by steam and interurban electric railways of portions of the streets in some municipalities for terminal or switching purposes has

become a serious interference with traffic and, therefore, recommends to all municipalities that the use of the streets in congested areas by rail carriers for terminal or switching purposes be otherwise provided for as rapidly as practicable.

Many other subjects also are treated in the proposed ordinance. These include the authority of the police, rules for the operation of vehicles, penalties and procedure on arrest. It is recommended that municipal ordinances in the main be supplemental to state law provisions, and that the latter be repeated only where constitutional provisions require such repetition in order to obtain local enforcement.

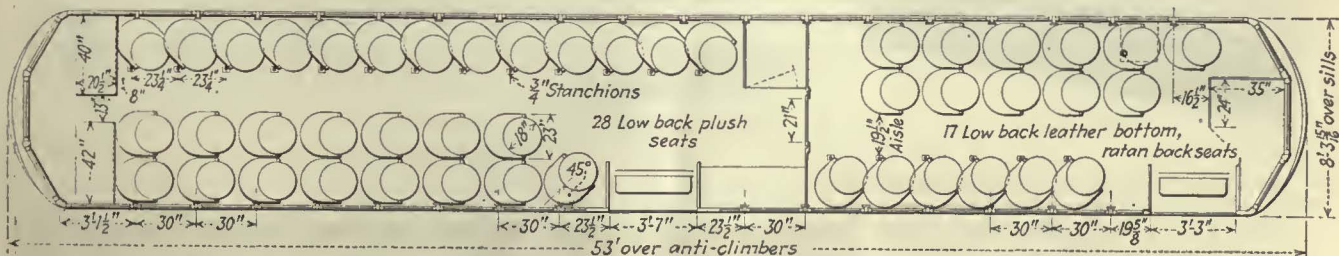
New Seating Arrangement for Pittsburgh Interurban



Seats in the parlor compartment are upholstered in green plush, with leather arm rests, as shown. The seats in the smoking compartment are upholstered in green leather

ONE of the interurban cars of the Pittsburgh Railways, in service on the Washington line, has been equipped with individual bucket type seats, arranged differently from any previous type. After a two weeks trial the decision was made to equip in a similar manner the remaining fifteen interurban cars of the 3700 series. They will be used on both the Washington and Charleroi lines.

The seats are arranged in a single row along one side of the car and in pairs along the other side. Those in the single row are placed at an angle of 45 deg. with the side of the car, while the pairs of seats are transverse. In the parlor or rear portion of the car the single row is on the right-hand side, while in the smoker or front portion the single row is on the left.



The seats are arranged in a single row at an angle of 45 deg. on one side, and in pairs, transversely, on the other side

Of the 54 seats in the interurban car, 45 are of the individual bucket type. Those in the parlor compartment have green plush cushions, plush backs and green leather on the arm rests and the seat back edges. Those in the smoking compartment have green leather cushions, cane backs and green leather arm rests and back trim.

In the Sept. 24, 1927, issue of the JOURNAL, a chair car of the Pittsburgh Railways was described, which also uses the bucket type of seat but the seating arrangement of which differs in some respects. This car has two rows of single seats arranged in "sawtooth" manner, as

the single row in the latest type. The seats themselves are somewhat different in that they have leather cushions, cane back seats, wooden arm rests and a statuary bronze binding along the edges of the seat backs. The company received a considerable number of commendatory letters from patrons concerning this car. Fourteen additional cars are being equipped with the same seating arrangement and some others with various combinations of the individual seat and the present cross-seat. Both leather and green plush cushions are being furnished, to determine the combination best liked by the patrons.

Using the Billboard to Prevent Accidents

Signboards erected by the Lehigh Valley Transit Company at hazardous points along the system have proved effective in warning motorists and children of attendant dangers

FATAL accidents practically have been eliminated and minor accidents reduced surprisingly on the lines of the Lehigh Valley Transit Company, Allentown, Pa., by erecting billboards with safety messages and pursuing a rigid safety policy. The billboards have proved a wise investment since claims and subsequent lawsuits have been avoided, and the cost of repairing damaged rolling stock reduced. In addition, the move has created much favorable comment on the outside and is serving as an effective public relations measure.

On the extensive system of the Lehigh Valley there are many dangerous points at which trolley crews had been warned to exercise extreme caution. Because of the recklessness and lack of consideration of the other party, the warnings proved of no avail. The company, therefore, decided to bring its message before the public. Billboards were advocated as the best medium and were erected at all the critical points. The billboards are very large, are brightly colored and bear forceful messages.

One of the boards was constructed in a heavily popu-

lated district at a point where children were accustomed to play in the streets and where once a little boy was decapitated by a passing car. The poster pictures two boys skating dangerously close to an approaching street car and bears the message, "Streets are not playgrounds."

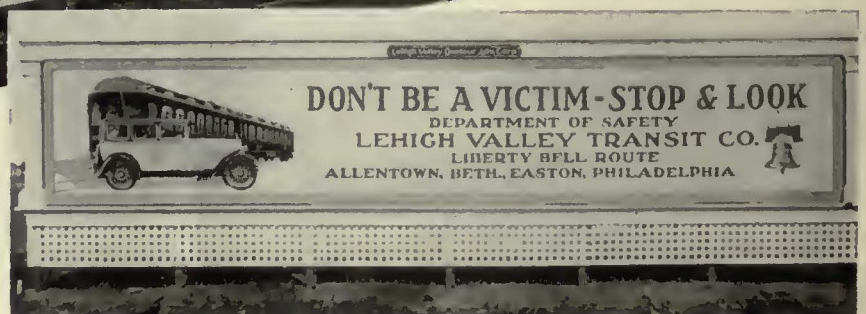
Another was erected at a place between Allentown and Bethlehem, where automobile traffic is very large and where several people have been hit in passing behind trolleys. "Auto drivers—watch the kiddies" is the warning this board gives. It depicts a mother and her two children passing around the rear of a trolley and about to step into the path of a moving automobile.

There are several grade crossings on the Liberty Bell Route to Philadelphia that are now protected by the signboards. One of these cautions "Don't be a victim—stop and look." It shows an automobile just escaping being hit by a two-car Philadelphia limited. Another, showing a similar escape, reads "Some time you will lose."

The big reduction in accidents effected by these signboards has caused much comment by safety officials of eastern Pennsylvania. Children playing along the route are being guarded more closely by police, and motorists are exercising more care. The thoughtfulness of the company in guarding the public is being appreciated. The department of safety of the company is headed by Edwin C. Spring.



The messages carried on these signboards of the Lehigh Valley Transit Company warn motorists to be careful. They are erected at points where accidents are imminent



Maintenance Methods *and* Devices

General Utility Line Truck*

By R. T. CHILES

Master Mechanic Cumberland County Power & Light Company, Portland, Me.

IN ORDER to cut labor cost on line work without investing a large amount of money in equipment used infrequently, the Cumberland County Power & Light Company has equipped a special truck with a removable tripod and winch. Four

pieces of I-beam is bolted to the end of the truck chassis frame and is braced from the end of the I-beam back to the side of the truck chassis frame. Four pieces of angle, two on each end, are bolted to the I-beam with a bolt connected to each pair. To these bolts are attached the forged hooks on both ends of the two side legs of the tripod. There are also two adjustable rests or jacks, which slip on the ends of the bottom edge of



Convenient type of line truck with winch and tripod developed in Portland, Me.

G.M.C. trucks of 2-ton capacity were purchased and equipped with Meade-Morrison No. 904 drum winches with a high mounting. Special bodies were built and compartments were included to take care of necessary material and hardware for the construction work. Each truck has a special tripod built in the company's shop. These tripods are adjusted easily and can be removed from the truck when desired. The winches and tripod connections are mounted directly to the truck chassis. In position, they make the truck very efficient, having been found especially useful for unloading and loading poles and for setting them in position. The winches are also used for pulling cable and wire.

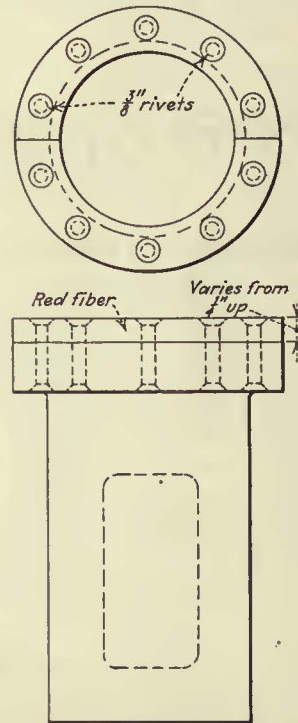
To adjust the tripod in position, a

the I-beam to take the weight off the truck spring. The third leg of the tripod is in two pieces, one telescoping inside the other for the purpose of adjusting the tripod to the maximum and minimum height. The bottom end of the third leg is adjusted to the truck chassis by means of a link, one end being fastened to the swivel foot on the tripod and the other to the connecting jaw bolted to a piece of channel section that is securely bolted transversely to the truck side frame.

The top ends of the two outside legs are equipped with forged eyes. The third or center leg, with a yoke that carries the sheave wheel with guard, is mounted on a hollow steel axle. To assemble the tripod all that is necessary is to put a shoulder bolt through the eyes and the hollow axle. This takes from five to ten minutes.

Fiber for Bearing Flange

WEAR of axle bearing flanges is always greater in some localities than in others. It is uneconomical to scrap the bearings and it is the general practice on many roads to build up the surfaces in some manner so that additional mileage can be obtained. This problem has been bothersome on the New York & Harlem Railroad, New York City, and numerous tests were made to determine the best method for building up these surfaces. It was determined finally that greater life could be obtained if the surface is built up with red fiber. All axle bear-



Method of attaching fiber to worn flange of axle bearing

ing flanges are now faced off and drilled for the reception of ten $\frac{3}{8}$ -in. flat-head rivets. A piece of red fiber is then riveted to this trued surface and the fiber face and flange are trued to a perfect surface. This shop endeavors to restore the flange to as near its original thickness as possible with a minimum of labor. Therefore the thickness of the fiber used varies from $\frac{1}{4}$ in. up, depending upon the amount of wear. It is claimed that with moderate lubrication a fiber faced flange will give a longer life than a babbitted surface.

*Submitted in ELECTRIC RAILWAY JOURNAL Prize Contest.

Portable Armature Rack



Armatures are kept off the floor with this type of stand

CCARELESS handling of armatures through the shop for various repair operations often causes failures which are sometimes not discovered until the final test is made. Often the fault does not develop until shortly after the armatures are returned to service. This incurs con-

siderable avoidable work and increases materially the annual maintenance cost.

In the shop of the Binghamton Railway, Binghamton, N. Y., a special armature rack eliminates the necessity of placing the armature on the floor and prevents damage to the coils and commutators by coming in contact with obstacles or metal chips. The rack was designed and built in the shops. Armatures undergoing repairs are stored on these racks until all work is completed, when they are put in their places on the large armature racks. These racks are about 11 in. wide by 18 in. long by 8½ in. high. The feet are made of 2½-in. oak and are concave to correspond to the contour of the armature. A 2-in. x 4-in. oak block installed between these feet on either end and tied with a ¾-in. bolt makes the base rigid and maintains the 11-in. centers. The top of the frame is covered with ¾-in. x 2-in. oak strips.

ing. While theoretically concrete is a fluid, it is well known that even after thorough mixing it contains air and water pockets and is capable of considerable reduction in volume, as is indicated by ordinary tamping methods. Moreover, this principle avoids mere puddling of the mix, which has a tendency to cause a settlement of the heavy aggregate. The 300 to 500 lb. of compressive force applied by compression tamping drives the concrete, without disturbing the relative position of the aggregate, into complete and full contact with the tie-bearing surfaces. The result is a solid support for the track structure over a very large area of tie bearing by a more dense concrete than is obtainable in any other way.

New Equipment Available

Compression Tamber Is Redesigned

FOLLOWING a careful redesign, based on field tests made in Buffalo after the first showing at the Cleveland convention last fall, the International Steel Tie Company, Cleveland, Ohio, has shipped a new model "A" compression tamping machine to the Kansas City Public Service Company. The new machines have 19 in. diameter standard electric railway wheels and a lifting mechanism for the two sets of tamping arms which raises and lowers them. In the raised position all the tamping mechanism is clear of the rail head and the paving, so that the machine can be hauled to the work behind a motor car or work train. The rack and pinion arrangement which does the lifting also provides for adjusting the tamping arms for rails from 5 to 7 in. in height.

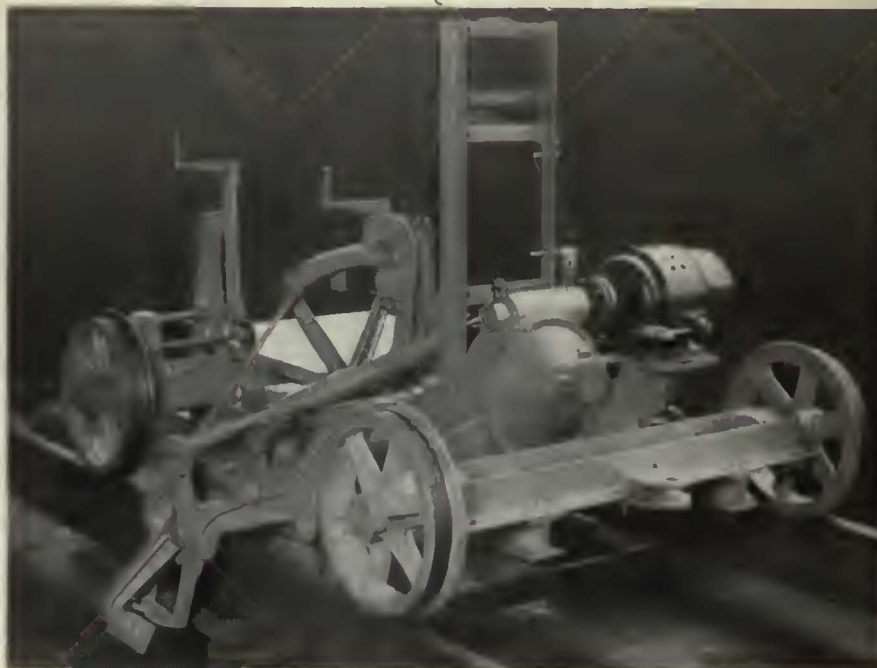
The drive from a 2-hp., 550-660-volt d.c. motor is through a completely-inclosed worm reduction gear running in oil, with the clutch contained in the same housing as the reduction gear. The machine is propelled along the track by means of hand-operated drive geared to the rear axle. The operator's position has been located carefully for con-

venience of control. Hand levers and clutch pedal are within easy reach, while the position of the tamping arms and their action as they compress the concrete under the plates are in plain view of the operator.

A new principle in track construction with concrete ballast and steel ties is involved in compression tamp-



The operator's position has been chosen carefully to give a good view of the action of the tamping arms



New model "A" compression tamping machine

Association Activities

Service Improvement Occupies Attention of Southwestern Transportation Men

ELECTRIC railways occupied an important place on the program of the Southwestern Public Service Association during its annual meeting at Dallas, Texas, May 2-5, 1928. More than 500 utility men, representing electric, gas and railway properties in the fast-growing Southwest entered into the spirited discussion of the problems of their respective branches of the utility industry.

An address by President R. P. Stevens of the American Electric Railway Association, which in his absence was read by J. W. Welsh, general secretary, was one of the features at the general sessions. Mr. Stevens brushed aside all details and sounded a keynote of confidence in the future of the electric railway industry by a graphic presentation of the part which it plays in the life of American communities. The greatest problem of transportation companies today he said is that of keeping abreast of the times. Mr. Stevens' address is printed elsewhere in this issue.

President M. T. Walker of the Southwestern Association expressed in his annual address a similarly optimistic view of the railway outlook. "The street railways are spending their money and energy to render better service and the public is looking with favor upon fare adjustments which will approximate adequate compensation for good service," he said.

RELIEVING TRAFFIC CONGESTION

Meetings of the railway section were devoted to the discussion of the general subjects of traffic, personnel selection and training, bus operation and car ride merchandising. Charles Gordon, editor *ELECTRIC RAILWAY JOURNAL*, outlined the progress that has been made in the relief of traffic congestion. "Traffic congestion," he said, "is primarily a community problem, not a transportation problem. It is, of course, of direct interest to transportation men because of the effect which congestion has upon the operation of public transportation facilities. But substantial and permanent relief measures are dependent on enlisting the support of all the factors in a community that are affected by traffic.

"Congestion has particularly serious consequences to centrally located business and property. It keeps people out of the central business districts, and as a consequence the development of outlying community and business centers has been proceeding rapidly because many people refuse to subject themselves to the hazards and inconveniences of downtown travel. As a consequence

downtown banks, department stores and shops of various kinds have been forced to establish branch establishments to reach customers who cannot conveniently come into the central district to do business. The threat which thus exists to the stability of investments in centrally located property makes the problem of bringing about relief from congestion of vital importance to those very business and property interests that frequently stand in the way of proposed remedial measures." Mr. Gordon said that transportation men are in a position to play an important part in helping to bring about improved traffic conditions, but that their success in such activity is dependent on their winning the confidence of the community through directing their efforts to improvements in the interests of the community as a whole and not merely that of the transportation company.

The importance of basing traffic regulation upon sound principles of street economics was emphasized. The speaker held that the purpose of regulation should be to serve the interests of the greatest possible number of people, and not any particular class of vehicle. He said that sound traffic regulation should be based upon the following principles: (1) The best interest of the community as a whole must take precedence over all other considerations in the allotment of street space; (2) regulation should be built on the principle of serving the interests of the greatest number of people; this is not synonymous with the number of vehicles; (3) use of street space as a public garage is a privilege, not a right.

CONGESTION A COMMUNITY PROBLEM

In the discussion of this question D. C. O'Dowd, superintendent of transportation New Orleans Public Service, Inc., agreed that congestion is a community problem even more than it is a transportation problem. He suggested the opportunity that exists for electric railway companies to render a distinct service to their communities through the employment and training of engineers qualified to aid in bringing about traffic improvement measures.

Parking was held by A. F. Townsend, manager Northern Texas Traction Company, Fort Worth, to be one of the bad practices that materially decrease the capacity of existing streets. He expressed the opinion, however, that short parking periods produce more traffic interference than do longer intervals, because frequent changes in parked vehicles result in more frequent inter-

ruptions to the traffic stream due to automobiles moving in and out of the parking spaces.

According to L. L. Allbritton, general manager Wichita Falls Traction Company, most electric railway men need to change their conception of their own business. The only possible means that is available for discouraging the use of private automobiles that produce traffic congestion and also reduced railway revenues, is that of offering a more attractive and more convenient public transportation service. G. I. Plummer, superintendent Dallas Railway & Terminal Company, cited the improvement in traffic movement in Dallas that has resulted from the elimination of parking in the business district during the morning peak traffic period.

B. R. Brown, chief engineer Dallas Railway & Terminal Company, questioned the possibility of getting acceptance of engineering recommendations for traffic relief and cited the experience of the Dallas Technical Club after it had spent almost a year in making an intensive study of traffic matters and had developed a report suggesting measures for relief. Mr. Gordon held that the process of improving traffic conditions has only started when the measures for relief are determined. A very important requirement is that of enlisting public interest in the proposed measures and winning the co-operation of the several interests in a city that are powerful in the determination of community policies.

The effect of improved electric railway equipment upon speed and ability to get through congested traffic was discussed by C. B. Frazer, superintendent of traffic Houston Electric Company. He held that faster public transportation service can be developed only through the better utilization of all electric railway equipment, and that although it has been demonstrated that new cars are revenue builders in Houston, the mere addition of a few modern cars is ineffective as a means of speeding up service unless the operation of the entire property is tuned up to present-day conditions.

Mr. Townsend supported this view by citing the average speed of car operations in Fort Worth, which has been increased from 8.5 m.p.h. to more than 10 m.p.h. through the purchase of new equipment and the rehabilitation of existing equipment to facilitate the loading and unloading of passengers.

J. W. Welsh, general secretary American Electric Railway Association, was introduced by Acting Chairman Holden, and suggested the advisability of forming local groups in each community to co-operate with the National Conference on Street and Highway Safety as a means of enlisting support

and co-operation in the application of remedial measures for street congestion.

Personnel selection and training was the subject of an address by C. J. Crampton, superintendent of public relations Dallas Railway & Terminal Company. Three factors were held to be important in the selection of satisfactory electric railway employees. First, the man must be a pleasant-looking representative of the company; second, he must have a certain background of education and intelligence upon which to build further instruction and training for transportation work; third, his record of previous experience and employment is a valuable guide as to any tendency of restlessness that would make him unsatisfactory raw material upon which to build.

Satisfactory results in the training of new men are dependent, according to Mr. Crampton, on the development of a well-planned training system. The job of running a car can be broken down into its elements so as to facilitate the work of training a new man. An important element in the success of such work is the development of properly qualified instructors who are competent to impart operating policies, methods and information to new men. "Even then," Mr. Crampton insisted, "the work of training has only started when the new man has been employed and given an assignment. Assurance of his success as an employee depends on a careful follow-up by a properly organized personnel department.

Additional experience in building a satisfactory body of employees was contributed in the discussion by R. C. Allen, superintendent of transportation Houston Electric Company, Mr. Frazer of Houston and Mr. O'Dowd of New Orleans. Mr. O'Dowd called attention to the fact that a busy conductor sometimes does not have the time or the opportunity to give a satisfactory explanation to a dissatisfied passenger, and cited the success which the New Orleans Public Service, Inc., has had with the plan of having conductors take the names and addresses of such passengers, so that a properly qualified representative of the company may call to give a thorough explanation or otherwise adjust any unsatisfactory experience to which a passenger may have been subjected.

EXPERIENCES WITH BUS SERVICE

Bus operation in both urban and interurban service occupied attention during the Thursday session of the railway section. R. L. Miller, Texas Motor Coaches, Inc., outlined the experience of his company with interurban buses, and R. C. Allen of Houston discussed the development of city bus service by the Houston Electric Company. The problems encountered in fitting the automotive vehicle into a transportation system provoked a lively discussion, and additional comments were added by W. W. Holden of San Antonio, C. B. Frazer of Houston, A. F. Townsend of Fort Worth, Charles Gordon and J. W. Welsh.

After a period of uncontrolled com-

petition by independent individual operators between Fort Worth and Dallas, the Texas Motor Coaches, Inc., was organized by the Stone & Webster Company to acquire and operate a dependable and responsible service between these two cities, and to coordinate this service with that of the interurban line of the Northern Texas

Traction Company. All of the non-descript buses formerly used have been scrapped and the line is entirely equipped with new vehicles suitable for providing a responsible service. Experience with this line has demonstrated that bus patronage fluctuates considerably more with weather conditions than does interurban patronage. Wet or inclement weather is particularly discouraging to bus riding, and Mr. Miller attributed this to the fear of skidding in rubber-tired vehicles. The speaker also emphasized that a bus driver is in much closer contact with his passengers than is an interurban car operator, and that his job is even more a sales job than is that of the car man. Successful bus operation was held to be dependent upon having a rate of fare adequate to permit the proper character of service to be given. Experience has shown that the flexibility of the bus lends itself to the development of chartered business much more readily than does the interurban.

The beginning of bus operation in Houston was attributable to a compromise for the elimination of jitneys in that city, according to Mr. Allen. Starting in a small way some four years ago, a total of 65 buses are in use at present. The new express line to Harrisburgh, which is equipped with Twin Coaches, is the latest step in the extension of buses in that city. Mr. Allen expressed the opinion that the bus has its place in any complete public transportation system, but that there is still much to learn about the proper basis of its use, the types of vehicles most suitable for various classes of service, and the factors which affect the success or failure of any given line. Comparison of the relative costs of car and bus operation are hard to make and easily may be misleading unless very carefully weighed.

In San Antonio, bus service has grown to 14 lines with approximately 67 miles of route, according to Mr. Hostetter of the San Antonio Public Service Company. Approximately 20 per cent of the passengers carried by the company are handled on buses, which constitute about 25 per cent of the active equipment in regular operation. In contrast to this Mr. Frazer said that only about 10 per cent of the total passengers carried in Houston are handled in buses, although the number of these vehicles operated is approximately the same as that in San Antonio.

DON'T TRUST TOO MUCH IN AVERAGES

W. W. Holden warned against the tendency on the part of electric railway men to attempt to reduce the experiences of a given line or a given property to averages and generalities in the effort to draw conclusions regarding bus operation. Particularly in the selection of equipment and in surveying the prospects of a given system, the characteristics of any particular line under consideration must be carefully weighed, he insisted. Mr. Townsend called attention to the need for considering both mileage and time in depreciation accounting. In certain classes of service where mileage is low, obsolescence becomes the con-

COMING MEETINGS

OF

Electric Railway and Allied Associations

May 16-17—Central Electric Traffic Association, Tuller Hotel, Detroit, Mich.

May 17—Society of Automotive Engineers, Metropolitan Section, Building Trades Club, New York, N. Y., 8 p.m.

May 22-24—Indiana Public Utilities Association, Columbia Club, Indianapolis, Ind.

May 24—New England Street Railway Club, annual meeting, Boston, Mass.

May 28-31—National Association Purchasing Agents, annual convention and exhibit, American Royal Building, Kansas City, Mo.

June 4-6—Midwest Electric Railway Association, Hotel Baltimore, Kansas City, Mo.

June 4-8—National Electric Light Association, Atlantic City, N. J.

June 6-8—Canadian Electric Railway Association, annual convention and exhibit, Toronto, Canada.

June 14-15—New York Electric Railway Association, Half Moon Hotel, Coney Island, N. Y.

June 20-27—American Railway Association, Div. 5—Mechanical, annual convention and exhibit, Atlantic City, N. J.

June 21-22—American Railway Association, Motor Transport Division, Atlantic City, N. J.

June 21-22—Wisconsin Utilities Association, Accounting Section, Hotel Pfister, Milwaukee, Wis.

June 28-29—Central Electric Railway Association, Cedar Point, Ohio.

July 8-12—Public Utilities Advertising Association and International Advertising Exposition, Detroit, Mich.

July 18-20—American Society of Civil Engineers, annual convention, Buffalo, N. Y.

July 25-27—Electric Railway Association of Equipment Men, Southern Properties, Cincinnati, Ohio.

July 27-28—Central Electric Railway Accountants' Association, Detroit, Mich.

Aug. 16-17—Wisconsin Utilities Association, Transportation Section, Sheboygan, Wis.

SEPT. 22-28, 1928

American Electric Railway Association, 47th annual convention and exhibit, Cleveland, Ohio.

trolling element in depreciation accounting and a time basis is the more suitable for setting up costs. When the mileage is high, however, that becomes the controlling element in determining the life of a bus. Mr. Townsend also indicated the desirability of charging off a heavier rate for depreciation when buses are new than when they are worn, and when the maintenance cost is increased. By starting with a high depreciation rate when the vehicle is new and maintenance cost is low, the sum of depreciation and maintenance may be made constant throughout the life of the vehicle.

Discussion of the life of buses raised a question of cost accounting practice as it influences the question of judging when a car should be scrapped because of excessive maintenance cost. Richard Meriwether, vice-president and general manager Dallas Railway & Terminal Company, said that the practice on his property is to accumulate maintenance costs for various classes of cars on the property so as to show a comparison of the costs on old and more modern equipment. Mr. Welsh called attention to the timeliness of this consideration of depreciation of buses and outlined the situation relative to the question of depreciation accounting, which is now being considered by the Interstate Commerce Commission and which may result in the requirement for giving much closer attention to depreciation analysis on electric railways than has been done in the past.

ROLLING STOCK DEVELOPMENTS

New developments in cars and buses was the subject of a paper prepared by L. E. Thorne, general superintendent Northern Texas Traction Company, Fort Worth. Mr. Thorne listed some of the more recent improvements that have been made in car design and equipment for reducing operating costs and increasing the attractiveness of the vehicle to passengers. He said that the lines recently equipped with new cars of modern design by the Northern Texas Traction Company have shown an increase of approximately 7 per cent in riding, although there has been no particular increase in population on these lines. With respect to bus design he expressed the opinion that though bus development has been more rapid than has been that of cars, there is still need for improvements that will reduce the cost of operation and insure freedom from service interruptions.

E. S. Meyers, assistant to the vice-president New Orleans Public Service, Inc., indorsed the view that buses have an important place in city transportation, but held that the need is imperative for buses that will accelerate more rapidly than do those at present available. He called attention to the possibility of the trackless trolley for certain classes of city service, particularly since improvements in chassis, motor and control design have eliminated some of the defects experienced in early types of trackless electric vehicles.

Friday's session was devoted entirely to a discussion of the problem of re-

building the car-riding habit. This was led by W. W. Holden, manager of transportation San Antonio Public Service Company. "No single factor is responsible for the success or failure of a given operation," said Mr. Holden. "On any particular line there are a number of balancing features, each of which must be carefully analyzed and weighed to determine its effect upon the success of that particular line."

SPEED OF TRANSPORTATION IS ALL-IMPORTANT

Mr. Holden agreed with the general principle that the speed of transportation service is all-important from the standpoint of patronage. But speed is merely one factor. The ultimate success or failure of a line is determined by the time which it takes a passenger to travel from his point of origin to his destination. That is determined not alone by the speed at which cars operate, but in large measure by the frequency of service, the routing of a line, the location of terminals and other similar considerations that are sometimes overlooked by transportation men.

According to Mr. Holden there is a vast difference between city and interurban conditions in determining the relative importance of the various factors that affect passenger comfort. In interurban service, for example, too much attention cannot be given to the matter of the design of seats, whereas in city service there are other items of equal or even greater importance. In the judgment of the speaker the trend toward luxurious seats for city cars can be carried beyond the economic limits of the rates of fare that can be collected for a comparatively short ride in a city car. Although it is important to provide the most comfortable possible seat in city service, the importance of the actual type of seat is overshadowed by the question of whether or not the passenger gets a seat at all, particularly in the rush hour. There is ample reason, according to Mr. Holden, for transportation men to recognize the very live demand on the part of the public for a seat for every passenger, even in the rush hours. Although the economic limitations of city operation seem to make it impossible to conceive a basis for providing seats for all rush-hour riders, the speaker held that it is nevertheless important to give attention to every possible means for making standing passengers comfortable.

REBUILDING CAR-RIDING HABIT

Many other factors were listed as being of extreme importance in the effort to rebuild the car-riding habit. These include ease of riding and quietness, comfort and cleanliness, keeping up with the traffic stream through rapid and smooth acceleration, and employees who have an adequate conception of the importance of the part they play in providing passengers with a satisfactory ride. Mr. Holden contended that fares are secondary in determining the volume of transportation patronage. He declared that the quality of service is the first consideration in determining

the success of any transportation enterprise. "Transportation men have been too prone to look at their problems as engineers and to overlook the importance of sales considerations," he said. "A product that people want can be sold at a fair profit, but it is hard to sell at almost any price something they don't want."

At the request of Acting Chairman Meyers, Mr. Gordon discussed the question of merchandising transportation service, and called attention to the need for an adequate analysis of the market for public transportation service as the first step in an effective merchandising program. Mr. Welsh quoted recent statistics prepared by the American Electric Railway Association's statistical bureau, which indicate that the riding habit on public transportation vehicles has shown a steady increase despite the enormous increase in the number of private automobiles in the country.

W. H. Burke, Southwestern district manager Stone & Webster, Inc., was elected president of the Southwestern Public Service Association.

J. P. Griffin, vice-president in charge of operation Texas Electric Railway, Dallas, was unanimously elected chairman of the railway section for the ensuing year, and thereby automatically became a vice-president of the Southwestern Public Service Association.

S.A.E. Metropolitan Section

EVOLUTION of bus design, from an engineering standpoint, will be the subject at the regular monthly meeting for May of the Metropolitan Section, Society of Automotive Engineers, to be held on May 17 at the Building Trades Club, New York, at 8 p.m. Two papers will be presented, one concerning chassis design and the other about body design. The former will be presented by George W. Smith, Jr., works manager of the White Company, and the latter by William C. Naegel, head of the engineering department of the Lang Body Company. A number of prominent engineers will present prepared discussions, and in addition, there will be open discussion from the floor. Carl W. Stocks, editor of *Bus Transportation*, is in charge of the meeting.

Plans for C.E.R.A. Meeting Progressing

EFFORTS are being made by the program and hotel and arrangements committees of the Central Electric Railway Association so that the summer meeting at Cedar Point will be an outstanding event. There will be two morning business sessions filled with interesting topics pertaining to the industry, such as "what the future holds for both city and interurban railways," "merchandising transportation," and other helpful subjects.

In the line of entertainment, there will be ample opportunity for sports.

The Road to Better City Transportation*

The Organized Street Railway Systems Are Best Fitted to Provide the Transportation for a Community. Theirs Is the Obligation to Provide It and the People's to Make This Possible

BY WALTER A. DRAPER

President Cincinnati Street Railway

DOUBTLESS there was a time when the street railway business drifted along uneventfully and was disturbed only by efforts of the public merely to get more of whatever kind of service it happened to be getting without much thought to improving. That has been changed by natural causes including the private automobile, its cousin the public automobile, commonly called the bus and other things.

We in our industry are gradually ceasing to call it the "street railway industry" and are coming to speak of it as "city transportation." The few of us who operated buses ten years ago were called either radicals or fools. Now it is not so much of a surprise to you to be told that the electric railway companies are operating some 10,000 motor coaches in regular service. This, however, does not mean that all of these coaches or even a majority have replaced electric cars, although this has been the case in some small towns. In quite a large measure these buses have been taken on by the electric car operators as a part of the general transportation service, either where rail line extensions might otherwise have had to be made or as additional service to communities already provided with rail car service.

In this recognition of the possibilities of the new type of transportation unit, whatever it may be, lies the promise of better city transportation. Just as those in any industry must adopt new methods, new ideas, even experiment with radical changes in order to keep going, so the men in the transportation industry are going to be progressive enough to take on the new things that give promise in our industry. To paraphrase a trade slogan, "when there is better transportation they will supply it."

AID OF THE BUSINESS MAN NEEDED

I assume that in talking to this group I am addressing not only city transportation men but those engaged in other pursuits that make them fairly representative of their communities and to those especially I would point out one of the greatest difficulties encountered by the transportation industry in its effort to supply the needs of the cities in which it is operating and that is the enlistment of the understanding and aid of the ordinary business man. I am not going to try to figure out just whose fault it is, but there is in the minds of many the feeling that the street railway

will somehow work itself out or be succeeded by something else that will.

This is a wrong attitude. In the first place the street railway operator is now just as much alive to the necessity of meeting the public fairly and providing the best service possible as is the department store or the automobile dealer. He does not do this for the pure pleasure of being a good fellow, but because it is good business, just the same as with the store or the dealer. He is trying his best and should be met half way. In the second place you are all going to need what he has to sell. All of us cannot drive our own conveyances all the time to all of the places to which we wish to go, and the means to get there is being provided by those who are best fitted by training and experience to do so, the men who have broadened the street car business into the public transportation business. In my opinion the rail car is now emerging from the trouble caused by higher costs and the tremendous growth of the private automobile—more the former than the latter, by the way—and with a rate of fare that pays the cost of the ride, it will prove its ability for a long time to come to handle masses more efficiently and more cheaply, even at the higher rates of fare now received, than any other form of local transportation.

RAILWAYS SHOULD PROVIDE ALL CLASSES OF SERVICE

It is true that the motor coach has developed and is still developing and is approaching the street railway car in unit size and carrying capacity, but even if it should provide a substitute for the rail car the street railway man is the one that should make the substitution. He should be expected to do it, aside from his mere willingness to do so. The street railway operator is skilled from training and experience in city transportation affairs. His experience has been bitter enough to teach him the most careful and efficient methods. Being the regularly authorized transportation provider in its community the existing street railway company, if it is alive to its job, is being depended upon to continue to provide both, or all kinds of service. If there is a proper understanding of the situation and a mutual confidence between public and company and a forgetting of the past by both (for both have been to blame) I am sure the public would rather have the existing agency serve it than a newcomer.

Another reason why the existing agency should be expected to give this service is in a spirit of fair play. While it is a fundamental necessity that a rate of fare be allowed sufficient to pay the

cost, in which is included a fair return on a fair investment, there is another real problem that is not so easily met. It is the problem of amortizing or writing off abandoned property and it can be seen how it comes into the picture when one contemplates the possible substitution of buses or some other means for cars. What is to be done with the investment in the part retired? Or, taking the extreme view of the extreme bus enthusiast who is continuously insisting that rail cars are doomed, the only way a rail car company can work out its honest investment is by going into the bus business or whatever other new form of city transportation succeeds it. This question must be studied and solved from the point of view of community as well as company, because of the mutual responsibility interdependence. It will not do for one to say, "I have no concern with that problem; let those who risked their money take their medicine, just as I who invest my money in an industrial venture must take my chances of getting it back."

REGULATIONS HAVE BURDENED RAILWAYS

The rail lines were built—most of them—in response to public demand. They encouraged the development of what had been unoccupied land. They tremendously increased the value of real estate. They added enormously to the taxable values of the community, and all the time they have been under increasingly drastic public control. They have not been free to charge "all that the traffic will bear." Their rates have been regulated by franchise agreements with the public, by ordinances or by statutory provisions putting their affairs in the control of public commissions. Had they been free to charge whatever fare was needed to assure profitable operation, or had they been free to quit when operation became unprofitable, they would have saved many millions of dollars to the investors. But such has not been the case. They have been required to render service regardless of economic conditions; they have kept on the job when privately-controlled ventures would have quit. Now, when they are prepared to render a new kind of service, their past service, their unrewarded creation of new public wealth, should be taken into consideration.

In any adjustment to new conditions extreme caution must be used in abandoning any rail line and substituting another form of service. If, after intelligent research and study, the decision is reached that unprofitable rail lines should be discontinued, then let us discontinue them. On the other hand, let us avoid repeating the mistake of years ago. Let us be slow to establish bus lines unless they can meet the test of necessity and can either become profitable or avoid becoming an undue burden on the whole system. Once a service is established it is extremely difficult to abandon.

There is another phase of city transportation toward which attention is being directed and that is rapid transit

*Abstract of an address before the group luncheon of the Transportation and Communication Section, Chamber of Commerce of the United States, Washington, D. C., May 8, 1928.

provided by other than surface lines. I have had occasion many times to point out that rapid transit is a comparative term. Today we think of subways and private rights-of-way in which and on which high speed can be attained. In providing this form of city transportation the public more than ever has to take an important part because no transportation system in and of itself could raise the money or could afford to build subways at their tremendous cost; and because the construction of subways is very properly looked upon as more in the nature of a grade separation or a two-level street than as merely a part of a transportation system. There is more traffic on the streets now than they can care for and because of all types of transportation the rail car can more readily be put underground it is not reasonable for those who use it to have to pay the cost of providing this additional way. There is no city in the country with anything like a complete subway system into which the taxpayer's money has not gone wholly or in partnership with the car rider's money. The cost is distributed variously in different cities. In some it is determined to relieve the car rider and put the load on the tax payer with the avowed purpose of keeping the fare down. In others the fare has been increased in order that the car rider might bear a proper proportion.

capital for subways and two-level streets, but the companies will still need large amounts of capital for which the car rider himself will have to pay.

Indiana Utilities Convention Plans

PRELIMINARY programs are now being distributed for the annual conventions of the Indiana Public Utilities Association, the Indiana Electric Light Association and the Indiana Gas Association, which will be held May 22-24, at the Columbia Club, Indianapolis, Ind.

The Public Utilities Association meetings will be held on Wednesday, the program being announced as follows:

9:30 A.M.

Address by President Arthur W. Brady.

Report of secretary.
Report of treasurer.
"The Government in Business," by John B. Mailing, Hammond, Ind.
"Training of Supervisory Forces," by Morse DellPlain.

2:00 P.M.

"Advanced Safety Measures," by W. R. Hirst, Indiana Bell Telephone Company.
"Indiana's Water Supply," by H. E. Jordan, Indianapolis Water Company.
"Regulation," a paper or remarks by a member of the Indiana Public Service Commission.
"Cultivation Through Advertising." Speaker to be announced later.

7:00 P.M.—DINNER

Address by John F. Owens, vice-president and general manager Oklahoma Gas & Electric Company and national chairman of the N.E.L.A. committee on public relations.

American Association News

American Executive Committee Meets in Washington

National executive body holds its regular meeting during United States Chamber of Commerce session at capital. Progress of Cleveland convention plans reported on

GETTING THE PUBLIC TO PAY FOR BETTER TRANSPORTATION A PROBLEM

One of the commonest criticisms of the street railway business is that it is archaic or obsolete. Some of the critics are honest in their beliefs. There are doubtless others who are not. It is true that the development of the automotive vehicle and the vast increase in wealth in this country have created a demand on the part of the public for greater speed and more comfort in city transportation and for more transportation facilities also. In spite of the tremendous growth in the private automobile with all the people it carries the number of revenue passengers carried by public means of transportation has shown a certain growth, with backsets from time to time, and this indicates that, to a degree at least, the more transportation facilities are offered the more traveling there will be. The difficulty has been and is going to be not in bringing about better transportation, just as we must have better homes and better clothes and better food, but in getting people to pay for it. We cannot get diamonds for the price of glass. While large numbers of people will continue to desire a form of transportation that can be provided at the least possible cost, others will be willing to pay for the faster and better service that they demand. An adjustment of these two kinds of service between the numbers that require them will be necessary. A business must be self-supporting or it cannot attract new capital to provide the improvement, development and extension of the service and to undertake experimentation and research. Public funds may supply the

SO THAT electric railway executives could attend the annual meeting of the United States Chamber of Commerce, the American Electric Railway Association executive committee held a meeting on May 9 in the Mayflower Hotel at Washington, D. C. A large volume of the association's business, including the further development of plans for the Cleveland convention, was dispatched during a meeting crowded with constructive discussion.

The large and representative attendance present included the following: President R. P. Stevens, L. S. Storrs, J. H. Hanna, J. G. Barry, S. C. Watkins, F. R. Coates, J. N. Shannahan, R. I. Todd, Thomas Conway, Jr., Thomas Fitzgerald, H. B. Potter, C. D. Cass, Harlow C. Clark, W. A. Draper, E. C. Faber, J. S. Kubu, R. H. Dalglish, Edward Dana, M. B. Lambert, S. J. Cotsworth, C. R. Ellicott, H. L. Geisse, W. F. Ham, B. A. Hegeman, Jr., L. R. Nash, C. C. Peirce, W. E. Wood, H. J. Kenfield, A. L. Humphrey, Labert St. Clair, Leslie Vickers, J. W. Welsh, A. W. Robertson, Raleigh Reese, C. S. McCalla, W. V. Hill, Charles Gordon and P. W. McGovern.

At the opening of the meeting President Stevens explained that the executive committee had decided to gather in Washington during the United States Chamber of Commerce meeting in recognition of the work being done by that body. He introduced Mr. Humphrey, chairman of the Transporta-

tion and Communication Section, who outlined briefly the work of that division of the National Chamber. President Stevens also called on A. W. Robertson, president of the Philadelphia Company, who commented briefly on the status of the local transportation industry. He called attention to the number of inhibitions that rest upon the industry, and expressed the feeling that it is to the industry's credit that it has been able to operate at all under the many restrictions and difficulties which it has experienced. He emphasized the importance of the operating personnel in the success or failure of a local transportation company and expressed the opinion that the importance of the contact made between platform men and the public cannot be overestimated, and that there is a wide field for increased efficiency through more effective use of an operating company's man power.

As national counselor for the electric railway industry, J. N. Shannahan commended the increased interest being taken by electric railway men in the work of the United States Chamber of Commerce and in that of the local chambers in their respective cities. He expressed the opinion that it has been of decided value to the entire industry.

DETAILS OF CLEVELAND PROGRAM

Chairman Frank R. Coates of the subjects and meetings committee outlined the tentative program that has been arranged for the convention in

Cleveland next fall. This includes not only a program for the general sessions, but also a series of luncheon group meetings during four days of the convention. The general subject on Monday of convention week, after the opening formalities, will be "The economics of transportation and the need for public participation in the solution of its problems." Tuesday will be devoted to the inspection of exhibits. Tuesday night is set aside for a program in the hands of the Advisory Council. On Wednesday the general subject will be modernization. Speakers on Thursday will reflect the viewpoints of others regarding the local transportation industry. The subjects of luncheon meetings will include interurbans, traffic, education, merchandising, financing, public relations, new cars, freight, motor buses, and management. Leslie Vickers, economist of the association, will act as manager of the group luncheons.

With respect to the work of the committee on national relations, Chairman J. H. Hanna outlined briefly the effort to obtain modification of the commerce act to clarify the definition of commercial electric railways, and the progress of pending legislation for the regulation of interstate buses.

DR. CONWAY REPORTS ON I. C. C. DEPRECIATION ORDER

For the sub-committee on depreciation, Dr. Thomas Conway, Jr., outlined the progress of developments with respect to Interstate Commerce Commission Order 19157 directing the electric railways reporting to the commission to show cause why the commission's rulings with respect to depreciation accounting for the steam railroads and the telephone companies should not be applied to electric railways. Dr. Conway reported that the hearings are expected to resume about May 10 in the rehearing of the railroad and telephone cases. He could make no prediction as to when the electric railway case is likely to be called. In answer to a question from President Stevens, Chairman Hanna said that although some difficulty had been experienced at first in getting from operating properties information needed by the committee, subsequently there had been full co-operation which had enabled the committee to proceed effectively in the preparation of its case. Dr. Conway explained that the committee on standard classification of accounts was working in co-operation with the sub-committee on depreciation to the end that the former committee is about to undertake a study of the need for revision of the standard classification with respect to depreciation accounting.

J. H. Hanna as chairman reported for the committee on publications. He estimated that *Aera* would about live up to the budget estimated for it at the beginning of the year, and requested for the committee expressions of opinion from the industry as to the content of the magazine and suggestions for its improvement.

In the absence of Chairman Luke Bradley, Mr. Storrs reported for the

committee on electric railway finance. This covered a tentative outline of the effort which is being made by the committee to liberalize the terms of car purchase now available through existing car financing agencies. In commenting on the report, J. G. Barry said that it was the opinion of the operating members of the committee that terms approximating 15 per cent down and ten years to pay instead of the customary car equipment terms of 25 per cent down and five years for the balance, would make it possible for railways to buy new cars out of income, and would thus stimulate the replacement of obsolete equipment. He said that the committee expected to be able to report real progress before the end of the year. M. B. Lambert suggested the desirability of making car financing facilities as broad as possible in order that as many car builders and manufacturers as desired to do so might participate. Mr. Barry explained that it was the hope of the committee that an ultimate basis of financing new cars might be developed in which all manufacturers could participate. Thomas Fitzgerald held that first cost of cars is a big factor in discouraging purchase of new equipment, and pointed out that the industry had been demanding custom-built equipment which made the price of new cars excessive. He argued that the industry should be able to buy cars built by the manufacturers on a production basis at considerably lower costs than those usually entailed under existing conditions.

PROGRESS IN INSURANCE

H. B. Potter reported for the committee on insurance. He also expressed the regret of Mr. Emmons, who was unable to attend the meeting. Mr. Potter indicated that the report of the sub-committee on fire prevention is nearly completed. He outlined also the procedure which the committee is following in an effort to work out a basis for discussion of the industry's insurance problem with representatives of the Central Rating Bureau.

C. S. McCalla reported for the entertainment committee. There was considerable discussion regarding some of the entertainment features which have been planned or suggested. General Secretary Welsh presented routine reports for several standing and special committees in the absence of their chairmen. These included exhibits, rapid transit, public speaking, bus depreciation, publicity, membership, *Electric Traction* speed contest, and co-operation of manufacturers. The Illinois Electric Railways Association was reported as a new association member. Present membership stands at 770 company and 1,195 individual members.

B. I. Budd, F. R. Coates, W. H. Sawyer, Thomas Finnigan, J. H. Alexander, J. G. Barry and T. W. Casey were named by President Stevens as a nominating committee. An invitation from Barron G. Collier to hold the next meeting of the executive committee on the yacht *Florida* on the North River in New York on July 13 was accepted.

Exhibit

UP TO the close of business on May 5 a total of 116 companies had filed requests for 65,156 sq.ft. of space at the Cleveland convention. This was the outstanding fact in the report of Chairman J. H. Alexander of the committee on exhibit, presented at the meeting of the executive committee held in Washington on May 9.

Applications were mailed to members on April 14, which is a full month earlier than they were sent out last year. In a number of instances manufacturers who had small space last year have increased their requests this year. However, there have been some membership resignations among the smaller companies. Assignments of space will be made at a meeting of the exhibit committee to be held in Cleveland on May 16. In the meantime, Chairman Alexander suggests that operating member companies instruct their purchasing agents to direct the attention of all salesmen visiting them to the desirability of having their companies participate in the next convention with an exhibit. He is particularly anxious to have a good display of cars in the outdoor track spaces.

New Association Members

FOUR manufacturers, one state association and thirteen individuals were elected to membership in the American Electric Railway Association at the meeting of the executive committee held in Washington on May 9. Resignations were accepted from three operating companies and fourteen manufacturers, while one manufacturing company was dropped. The new members elected are:

MANUFACTURER COMPANIES

Cowdrey Brake Tester Organization, Inc., Fitchburg, Mass.

Curtin-Howe Corporation, New York.
DeLuxe Products Corporation, La Porte, Ind.

Reliance Manufacturing Company, Massillon, Ohio.

STATE ASSOCIATION

Illinois Electric Railways Association, Springfield, Ill.

Summary of Uniform Vehicle Code

PAMPHLETS giving a summary of a Uniform Act Regulating the Operation of Vehicles on Highways and a Uniform Motor Vehicle Operators' and Chauffeurs' License Act, as approved by the National Conference on Street and Highway Safety, are now being distributed by the American Electric Railway Association. This summary has been prepared for the convenience of legislators, state officials and others who believe in the principle of uniformity in traffic regulation and who, while not desiring to throw away the existing laws of their own state, are ready and willing to bring these into harmony with other states as far as practicable.

News of the Industry

Special Session of Illinois Legislature

In the formal call for a special session of the Illinois Legislature to give Chicago home rule and adequate transportation 22 items are included, thirteen of which pertain to Chicago. The call includes legislation for the consolidation of the transportation agencies in Chicago; the building of subways by special assessments, and permits the Legislature to repeal the law limiting street railway franchises to twenty years and to substitute any other fixed period of time, providing all franchises for more than a year shall be approved by the electorate concerned. The Governor's call instructs the Legislature not to consider any franchise which is "indeterminate or terminable."

Although he has not signified his approval of any particular number of years as being suitable for the length of the franchise, the items in the call which have to do with Chicago are to amend the public utilities acts so as to transfer authorities and duties now vested in the Illinois Commerce Commission in regard to Chicago public utilities to corporate authorities of Chicago or in a board or commission elected by Chicago citizens. There is a further suggestion of the need to enact a new law embodying the same provisions giving Chicago the legal right to grant and control franchises; amending the utilities act of June 29, 1921; amending a clause to provide for the incorporation of cities and villages; to give their officials power to permit, regulate or prohibit laying of tracks under terms and time limits not to be perpetual and if exceeding one year not to become effective without approval by a majority of the electors. Finally, the plan is to amend the cities and villages act to comply with the foregoing provision.

Any laws limiting the time of a permit to construct railroad tracks in any city, town or village would be amended, any such amendment to provide against a perpetual, indeterminate franchise. There is an additional suggestion of legislation providing for the construction of subways by special assessment and for the laying and operation of street railroad tracks and power lines. To further unification the Legislature is urged to enact laws or amend existing laws so as to authorize the consolidation and merger of corporations organized to carry passengers for hire.

Public Control Bill of Eastern Massachusetts Signed

The new law which extends for five years more the public control of the Eastern Massachusetts Street Railway

has just been signed by Governor Fuller. This makes the act operative. Under the terms of the new measure the board of trustees of the railway is reduced to three members, two of whom are to be appointed by the Governor and one by the directors of the road.

Legislation for Boston "El" Fails

Nothing has come of all the attempts that were made in the Massachusetts Legislature this year to legislate for the Boston Elevated Railway. Numerous propositions were suggested. All that came to a vote were rejected. The only measure not voted on was Elliot Wadsworth's proposal to return the road to

the stockholders; this was not pressed because it would undoubtedly have met with the same fate as all the other ideas.

Governor Fuller, who had said that he would keep the Legislature in session all summer, if necessary, to secure satisfactory Elevated legislation, called a conference on that subject on May 7, but no definite action has been announced. It is believed that the Legislature is so unsettled by conflicting views on public control, public ownership, private operation and rapid transit extension proposals that it cannot accomplish anything. In the absence of any legislation the Boston Elevated Railway will continue under public control, subject to two-years notice of termination by either side.

Business Must Build Permanently for Prosperity

Largest United States Chamber of Commerce meeting ever held goes on record to this effect. Walter A. Draper among the speakers

WITH an attendance exceeding that of any previous meeting the sixteenth annual session of the Chamber of Commerce of the United States got under way on May 8 in Washington under the most auspicious circumstances. Teamwork in business was the keynote of the meeting. This was based upon the conception that modern business is so interwoven there is a great common responsibility to build permanently for prosperity and to eradicate those elements and influences in each specific industry that tend to seek immediate profit at the expense of stability.

This modern business philosophy was voiced emphatically in an address by Judge Edwin B. Parker, chairman of the Chamber's board of directors. "The profession of business must be purged of those pirates whose acts stigmatize and bring business generally into disrepute," he declared. "Such individuals, unmindful of their duties to the public, inevitably bring upon themselves and the entire institution of business the thunderbolts of public wrath in terms of legislative and governmental regulation that hamper a legitimate freedom of initiative. Ruthless and selfish initiative must be curbed in the public interest and in the interest of legitimate business."

Lewis E. Pierson, the president of the Chamber, came out unequivocally for the maintenance of the Chamber's position on tax reduction. "That position," he declared, "was sound when your committee made its recommendations. It was sound when the member-

ship, by an almost unanimous vote, indorsed it. Nothing has occurred since to modify it. It is sound today. The Chamber is committed to the position that government income and government expenditures should substantially balance. Large surpluses are an inducement for demands on Congress for extravagant spending."

In spite of the great increase in the use of the private automobile, the number of revenue passengers transported by public means of transportation also has increased, it was pointed out by W. A. Draper, president of the Cincinnati Street Railway, at the Tuesday luncheon of the Transportation and Communication group. The more transportation facilities that are offered, he said, the more travel there will be. The difficulty, he said, is not in providing better transportation, but in getting people to pay for it. Some will be willing to pay for a faster and better service, but large numbers of people will continue to demand the form of transportation that can be provided at least cost. An abstract of Mr. Draper's address is printed elsewhere in this issue.

In its refusal to confirm John J. Esch as a member of the Interstate Commerce Commission, the Senate, it was declared by Samuel Dunn, editor of *Railway Age*, acted as a court of appeals and made a decision in the Lake Cargo case when it had not heard the evidence or the arguments.

"Adequate, dependable and speedy railway service, such as we now have,

is essential to sound, industrial, commercial and financial conditions," Mr. Dunn continued. "We cannot have such service long unless the railways are managed efficiently and in addition are fairly and efficiently regulated. The act to regulate commerce is restrictive enough—perhaps too restrictive. The substitution for it in actual practice of a still more restrictive policy, dictated largely by political considerations, is unfair to railway managers and investors in railway securities, and is a menace to our transportation service and a threat to the economic welfare of the country."

Because of recent scandals associated with men prominent in high business circles, Judge Parker stated that "America and American business are on trial before the world" and he challenged organized business to "cast the beam out of its own eye and set its house in order." He said:

Just as nations will decline to recognize a government committed to destroying the foundations of civilization, and just as the legal and medical professions purge themselves of unethical practitioners, so will business decline to recognize as a member of the profession of business, and trade associations will decline to receive into their ranks, or will expel, an individual or an organization that wilfully violates the fundamental principles upon which sound business rests, or that persists in ignoring the decencies of business intercourse, and besmatters all business with the slime of corruption or with the muck of unclean practices.

Government regulation of business and government ownership of businesses was also scored by Judge Parker. In this connection he said:

The Chamber of Commerce of the United States is committed to the principle that government should not enter the realm of business to undertake that which can be successfully performed in the public interest by private enterprise. This principle is politically and economically sound. It is in far less danger from the propaganda of radical agitators than from the members of the business profession who are faithless to their obligations, who break down public confidence, and who provoke government regulation.

This "cleaning of its own house" was advocated as the first step that must be undertaken, in the greater prosperity that is foreseen for American business.

Wages Advance in Cleveland

A wage increase of 2 cents an hour was announced by the Cleveland Railway, Cleveland, Ohio, effective May 1 for the benefit of 2,800 motormen and conductors on street cars and motor coaches. The new rates are 67 cents for the first three months, 70 cents for the next nine months and 72 cents thereafter. The men had demanded a 5-cent raise and recognition of the union. This latter the company refused, on the ground that the Ohio Supreme Court had held that it was against public policy for a utility to make a closed shop agreement. The increase will cost the company \$160,000 a year.

Joseph H. Alexander, president of the company, said the men deserved the

increase on account of the savings they had effected in accident and power costs. He announced that an adjustment will be made in the wages of shop employees. The shop week recently was reduced from a 54-hour to a 44-hour week, with no increase in the hourly rates of pay. This reduction in hours effected a saving of \$350,000 annually in shop expenses. Part of this saving will be consumed in increased rates of pay.

\$25,000,000 Terminal Project for Newark

Long-discussed plan involving use of canal bed by local railway comes to fruition. City Commission studying project

PROPOSALS likely to change the whole aspect of the center of Newark, N. J., and alter the present trend of population were made public on May 9 by Mayor Thomas L. Raymond. Envisioned in proposed contracts between the city and the Pennsylvania Railroad and the Public Service Corporation, operating Public Service Co-ordinated Transport, are the construction of a new Pennsylvania station at Market Street, which is also to be a bus and trolley terminal, the routing of the Hudson tube trains over the Pennsylvania tracks as far as South Newark and the consequent abandonment of the Manhattan Transfer and of the present tube terminal at Park Place, the creation of a high-speed trolley line along the right-of-way of the derelict Morris Canal from Pennsylvania station to the Belleville city line and extension of South Broad Street by viaduct over Pennsylvania tracks to connect with state highway No. 1.

In the proposed contract with the Public Service Corporation the city agrees to construct a two-track electric railway in the canal bed and construct stations along the route and build a terminal under the new railroad station. The Public Service Corporation agrees to supply the cars and the power with which to operate them and to pay the city 4½ per cent of the cost of building the stations and the terminal under the railroad station. The Public Service Corporation is to get credit for franchise taxes now paid in the city on all lines using the canal roadbed.

The railway to be built by the city in the canal bed would be leased to the Public Service for fifty years, with a renewal privilege of fifty years. After the first thirty years, either the city or the company could terminate the contract on two years' notice. The Public Service would carry maintenance and repairs on the railway during the terms of the lease.

The whole project will cost \$25,000,000, it is estimated. The city will spend \$7,000,000 in connection with the erection of the new Pennsylvania station and \$5,500,000 on the improvement of the Morris Canal bed. On its part the Pennsylvania will contribute \$12,500,000 toward the cost of the station. Five years will be needed to complete the work, which will begin as soon as the contracts are signed.

Hocker Line Resumes Service

After a cessation of ten months, service on the newly organized and rehabilitated Hocker line, now known as the Kansas City, Merriam & Shawnee Electric Railway, was resumed Sunday, May 6. Herman Sonken, president of the line, and W. K. Paul, vice-president, rode the first car over the line. At each of the 33 stations along the 7-mile route, they announced the restoration of service. On the present schedule, the first car will leave Rosehill, Kan., at 6 o'clock. Cars will operate on a half hour schedule in the rush hours and on an hourly basis through the remainder of the day. A fare of 3 cents a mile will be maintained, with regular city fares added from Rosedale into Kansas City.

On Saturday, May 12, the official opening celebration was to take place. A parade of cars from the Kansas City terminus of the line at Third and Delaware Streets, to Rosehill was scheduled. Officials of both cities, the Kansas City Public Service Company, 200 Kansas City business men and a 30-piece band were to be passengers. A barbecue was to be held in Shawnee Park at the conclusion of the parade.

Situation Unchanged in Columbia

Except for an increase in the number of buses operated by the Columbia Bus Company, Columbia, S. C., an independent, there has been little change in recent weeks in the transportation problem in that city—a problem that has been acute since March, 1927, when the cars of the Columbia Railway, Gas & Electric Company went into the carhouses. In the latter part of April, an appeal was taken to the United States Circuit Court of Appeals, sitting at Richmond, Va., from an order of United States District Judge Ernest Cochran revoking an order to stay proceedings in the state courts. The action in the United States Court is to compel the Broad River Power Company, the controlling company, to resume the operation of the street cars.

The Columbia City Council recently passed an ordinance under which a committee has routed the buses of the Columbia Bus Company on 30-minute schedules, but the unregulated 10-cent jitneys are still permitted to run as free lances. Licenses for these jitneys have been refused by the City Council throughout this year and it is believed that under the "route" ordinance they will be driven from the field as their main popularity has been their elasticity.

Another angle to the transportation problem is that in the election for two members of the Columbia City Council, practically every one of the 14 candidates gave his views on transportation, and a majority expressed the opinion that the railway was the ideal system. The two men elected, both serving their first term in Council, and both young, have declared their intention of doing what they could to give Columbia "adequate, dependable transportation."

R. P. Stevens Will Head Allied Power & Light Company

Company, newly formed, under which many important utility properties are being brought together. Well-known engineering and financial interests concerned

R. P. STEVENS has been elected president and B. C. Cobb chairman of the board of the Allied Power & Light Company, organized to consolidate the interests of Hodenpyl, Hardy & Company, Inc., and Stevens & Wood, Inc., New York. It has contracted to acquire substantial stock interests in Commonwealth Power Corporation, Northern Ohio Power Company, Penn-Ohio Edison and other companies.



R. P. Stevens

Systems of great magnitude are being brought together in the new affiliation. They are not only far flung geographically, but they embrace nearly every public utility activity, with no inconsiderable part made up of railway properties. To follow the companies through in all their ramifications would be quite impossible here, but their extent is indicated by the fact that their gross annual receipts are about \$50,000,000. This puts the properties well to the forefront of systems of this kind as earners.

Among the companies included but not necessarily in the order of their importance are the Commonwealth Power Company, the Penn-Ohio Edison Company, the Northern Ohio Power & Light Company, the Illinois Power Company, the Southern Indiana Gas & Electric Company, the Michigan Electric Railway, the Electric Railway Securities Company and the Sioux City Service Company. Through one affiliation or another the allied system will include the railways in Youngstown and vicinity, Akron and environs, Chattanooga, Nashville, Grand Rapids, Springfield, Ill., Sioux City and Saginaw and the Peoples Railway in Dayton as differentiated from the other roads there. This summary does not presume to be complete, but it does show that the properties included embrace city, suburban and interurban railway operations of vast proportions.

Mr. Hodenpyl and Mr. Hardy, who

have been largely interested in Hodenpyl, Hardy & Company, Inc., since its organization, will have substantial investment interests in the allied company, but will not actively participate in its operations.

B. C. Cobb as chairman and R. P. Stevens as president of the new company, with Landon K. Thorne, Alfred L. Loomis, Jacob Hekma, J. T. Harrington and H. S. Scarritt, will constitute the board of directors of the Allied Power & Light Company. Messrs. Thorne, Loomis and Scarritt are officers of Bonbright & Company, Mr. Harrington of the Penn-Ohio system and Mr. Hekma of Hodenpyl, Hardy & Company.

Mr. Stevens, in addition to being president of the new company, is President of Penn-Ohio Edison Company, which is just taking over the Northern Ohio Power Company, and chairman of the board of Stevens & Wood, Inc., also president of American Electric Railway Association.

Mr. Cobb, in addition to being chairman of the board of the new company, is president of Consumers Power Company, Northern Ohio Power Company and is vice-president of Commonwealth Power Company.

Hodenpyl, Hardy & Company, Inc., was organized in 1914 and with its predecessors has for more than 30 years been interested in the organization, development and operation of public utility properties. Many of such properties are now successful component parts of the Commonwealth Power Corporation System. Hodenpyl, Hardy & Company and associated interests were among



W. H. Sawyer

the pioneers in the development of the holding company plan of diversifying utility interests, the development of hydro-electric plants, the long distance transmission of electricity by high-tension lines, and in the distribution of securities on the customer-ownership plan.

Stevens & Wood, directly or through

their predecessor companies, for many years have engaged in the general engineering and construction business and the managing, supervising and financing activities of public utility corporations. In addition, their engineering work in the industrial field has been varied and considerable. Among their important power house undertakings at the present time are the Toronto station of the Ohio River Edison Company, the completion of the Fairbanks, Alaska, power station for the U. S. Smelting, Refining & Mining Company, and the design and construction of the new Deepwater power station at Wilmington, Del., for the American Gas & Electric Company and the United Gas Improvement Company, which is to be used jointly by these companies and also to supply process steam to E. I. duPont de Nemours & Com-



B. C. Cobb

pany. This latter is the first new station to be designed for 1,200 lb. steam pressure. It has attracted national attention on this account and on account of its many other progressive design features. Stevens & Wood, Inc., of which W. H. Sawyer is president, will continue business as at present as a subsidiary company and as consulting engineers. Hodenpyl, Hardy & Company will be dissolved. Management of the companies brought together will be under the new Allied company.

Bonbright & Company, Inc., expect to offer in the near future an issue of securities of the new company.

"Give and Take" Suggested in Omaha

President Shannahan of the Omaha & Council Bluffs Street Railway has submitted to the City Council of Omaha a proposal whereby the stockholders, bondholders and the bondholders' protective committee agree that if the city will not begin an ouster suit against the company when its franchise expires on May 22 next, the company will not object to the inclusion in the new franchise of a provision that the company waive all claims and rights under past franchises and ordinances upon which is based the claim to the possession of a perpetual franchise. The new fran-

chise is scheduled for submission to the voters at the November election.

The attorneys on both sides have filed a stipulation in the federal court in the case brought by the Guardian Trust Company for the bondholders to establish the right to a perpetual franchise setting forth the agreed facts. The case will be ready for immediate submission if a new franchise is denied, and will be dismissed if a new franchise is granted.

Oldest Horse Car Presented to Henry Ford

At a rather unusual ceremony on May 8, H. Hobart Porter, president of the Brooklyn City Railroad, Brooklyn, N. Y., presented to Henry Ford for installation in his museum at Dearborn, Mich., the oldest horse car of its type in existence. After an exhaustive search by Mr. Ford's agents the Brooklyn selection was made. This car, known

became a motorman. He still is in the company's employ on the Flatbush Avenue Line.

H. Hobart Porter, president of the railway, in presenting the ancient vehicle to Mr. Ford said:

In 1853, at the very inception of street car transportation, the Brooklyn City Railroad was organized by the citizens of Brooklyn in order that they might enjoy this then modern method of transportation. The funds for this company were secured by a door to door sale of its \$10 par value stock for \$10 in cash. During the 75 years which have intervened the Brooklyn City Railroad has never been in receivership or reorganized, and many of the owners of its stock today are direct descendants of the original purchasers. During this three-quarters of a century the management of the Brooklyn City Railroad has confined itself to endeavoring to serve the public and, I believe, has a very enviable record therefor.

I have heard it said, Mr. Ford, that you are the man that made walking a pleasure and I, who have a long memory and lived some years in the past century, have al-



P. & A. Photos, Inc.

Henry Ford drives model of yesteryear

in its time as a "Jigger," is a one-horse model and was originally placed in service in 1868.

For twenty years the car was operated on the crosstown line of the Brooklyn City Railroad from Hunters' Point, Long Island City, to Erie Basin in South Brooklyn. In 1888 the car was taken from this main line and replaced by a vehicle of the two-horse type. The original car was then put into service on a route from Hunters' Point to the 34th Street Ferry at the foot of Borden Avenue. Here, under the guidance of Michael O'Connor, long since passed away, it was operated until 1897, when this route was discontinued. The car was built by the Jones Car Company, West Troy, N. Y.

An interesting feature of the ceremony on May 8 was the fact that the driver in charge of the car was James P. Gregory, who entered the service of the Brooklyn City Railroad in 1884. He long served as a driver of horse cars, and with the advent of the electric car

ways taken exception to that statement. Long before the birth of the Model "T" there was a vehicle that made walking, running or swimming even a joy. There is that vehicle, the old horse car. It served a useful purpose and was superseded. It is a mute witness of another day.

Concluding he said that as Mr. Ford had done more than any other man to modernize the transportation methods of the world, it was fitting that this well-preserved relic of urban mass transportation should be entrusted to him and in behalf of the Brooklyn City Railroad and the people of Brooklyn he turned the car over to him for his museum.

Among the prominent men invited to attend the ceremony were the Honorable James J. Byrne, president of the Borough of Brooklyn; Barron Collier, Col. W. N. Dykman, E. P. Maynard, officials of the Ford Motor Company. C. E. Morgan, vice-president and general manager of the Brooklyn City Railroad, and other officers of that company also witnessed the presentation.

Vote in St. Louis Favors Strike

A strike of the St. Louis Public Service Company's trainmen and shop workers affiliated with the Amalgamated Association seems likely. On Wednesday, May 9, the question of a strike was submitted to the workers at secret meetings. Since then it has been announced that 4,455 men voted for and 16 against a walkout unless the company recedes from its stand against the increased wages sought by the men and its intention of forcing through a lower wage schedule when the contract expires on June 2.

On May 3 the company served written notice on the union officials that it had exercised the 30-day clause of cancellation and that so far as it was concerned the contract would be a dead letter on and after June 2. The time for the strike, if one is called, is up to a special committee appointed by the union. In the meantime it is understood the union will not abandon hope of reaching a satisfactory understanding, and negotiations will continue up to the expiration of the present contract.

To date neither side to the controversy has seen fit to use a clause in the contract under which disputes as to wages, etc., may be submitted to the Missouri Public Service Commission. Mayor Victor J. Miller has declined to act unless requested to do so by one of the disputants.

The present wages of the carmen range from 50 to 67 cents an hour, the average weekly wage being \$36. Shopmen under the scale asked by the union would receive an increase of 10 cents an hour and the carmen 5 cents. This would mean a total increase of \$2,833,000 in the annual payroll or 28.5 per cent, the union contends. The company's answer is, the increase would total far in excess of the union's figures. In turn it has asked that wages be cut 4 to 6 cents an hour. This would save 8.27 per cent on the payrolls and total \$837,000 annually. According to the company fares would have to be increased to grant the union's demands.

The decrease in the number of passengers carried in St. Louis since 1923, when the present wage scale went into effect, has reduced revenues \$5,790,000.

Sam W. Greenland, manager of the company, has expressed a willingness to conduct further negotiations with the workers.

Fare Change Impends at Harrisburg

According to the *Harrisburg Patriot* the Harrisburg Railways, Harrisburg, Pa., has in mind an increase in fares. The corporation's property is being inventoried and appraised. The same authority says that several plans for an increased fare are under consideration. One is to maintain the present 6-cent fare and eliminate the transfer. Another is to retain the transfer and raise the rate to 7 cents. Still another plan provides for fare zones.

Decision in Piedmont & Northern Case to Be Appealed

Suit is to be filed as a result of the recent refusal of the Interstate Commerce Commission to grant the Piedmont & Northern Railway permission to build a connecting link between its North Carolina and South Carolina divisions from Spartanburg to Gastonia and to extend its lines from Charlotte to Winston-Salem. At the time of the hearing of the case last summer, Mark W. Potter, New York, one of the attorneys for the company, stated that the railroad reserved the right later to question the commission's jurisdiction in such cases.

The Piedmont & Northern, through its proposed extensions, would have provided an outlet southward for the Norfolk & Western, which, with connecting lines, would have made possible formation of a new trunk line railroad to Florida. The Southern Railway, in particular, along with the Louisville & Nashville and the Seaboard Air Line, opposed the application, and the commission decided that the Piedmont & Northern was really a railway doing a general business, the only difference between it and other roads in the section being that it was operated by electricity.

Slogans in Philadelphia

Prizes have just been awarded by the Philadelphia Rapid Transit Company, Philadelphia, Pa., for three safety slogans suggested by its employees. Two winners were bus operators, the other a chemist connected with one of the power stations. The slogans follow:

The best safety device is located just above your ears. Use it.

Habits are easy to form. Make safety one of them.

Do your hesitating on the sidewalk, not in the street.

Be careful and take a look. After you have looked be careful.

"Aladdins of Industry" Distributed in Ohio

Complete and accurate information about electric railways is being put into the hands of the student generation of Ohio by a school textbook, "Aladdins of Industry," compiled by the State Committee on Public Utility Information. This book, now used by 1,152 high schools and colleges as a basis for their regular class-room work, has run into five editions, comprising 192,000 copies. All branches of public utility operation are discussed. The history of electric railways is traced, their growth pictured, present-day activities described and plans for the future discussed. Regulation, fares, taxation, cost of service and the like are treated at length.

In its study of textbooks then in use, the Ohio committee found the subject of utilities was generally confined to a chapter or less, the information often being sadly out of date.

The subject of regulation, where it was touched upon at all, stressed the need of regulation for the public's safety, but said nothing about the equally important function of protecting the utility industry's service to the public and its investors.

After due deliberation the committee decided a new book should be written that would tell the truth, the whole truth, and nothing but the truth about the utilities. The first few books off the press were sent rather diffidently to school officials with letters telling them that if the books met with their approval, and if they believed their students could use them with profit, more would be furnished free of charge. The response was very gratifying.

Progress Made Toward Changes in Toledo Operation

Representatives of the city and the Community Traction Company, Toledo, Ohio, have agreed upon major ideas in a plan for a solution of railway matters at issue in Toledo for several years. These grew out of features of the Milner service-at-cost plan that proved disappointing and the slump in car riding brought about by the tremendous gain in the number of privately owned automobiles. According to the program of Mayor Jackson, one of two suggested changes will be presented to the City Council on May 21.

Street Railway Commissioner E. L. Graumlich and David H. Goodwillie, member of the board of street railway control, had a large part in drawing up the new plan. Mr. Goodwillie is a former city service director and has served on the board during the entire six years of operation under the Milner ordinance.

The Community Traction Company will pay off a paving obligation of \$185,000 plus interest, and the Toledo Edison Company will reduce the power rate as agreed upon in recent negotiations. The Doherty interests have also agreed to provide nearly \$1,000,000 of new capital to finance the work of rehabilitating and extending the railway lines.

The company will also agree to purchase about 125 buses. In return the city plans to pass an ordinance which will prohibit independent bus lines from operating within a quarter mile of existing transit lines, a plan that could not be construed as monopoly under the city charter. Arrangements will be made to purchase at a fair appraisal the property of present lines which have no franchise or operating rights in the street.

Under the general plan no vote of the people will be necessary to put into effect several improvements and retain the general Milner plan.

Railway revenues have responded favorably as a result of increased employment in Toledo, and with the sinking fund requirements now eliminated, a surplus will probably be shown by the Community Traction Company each month.

Electrification Rumors About New York Central Revived

The New York Central Railroad has spent upwards of \$1,000,000 making a survey to study the advisability of electrifying its entire main line from New York to Buffalo, in which work about \$20,000,000 will be spent in electrifying its Buffalo terminals. This statement is attributed to William E. Robertson, vice-president of the Terminal Grade Crossings Commission, Buffalo, and vice-president of the Robertson Electric Construction Company, Buffalo.

Mr. Robertson says the information came to the commission in its negotiations with the New York Central Railroad. The announcement of reported plans of the New York Central was made by Mr. Robertson before a meeting of the Buffalo City Council in which he added that the company's lines within the city will be electrified within the next ten years. Mr. Robertson said:

The survey already completed by engineers for the New York Central indicates the electrification of the main line between Buffalo and New York will cost \$350,000,000. Carrying out the plan, of course, involves the matter of financing the change from steam to electricity on about 450 miles of main line track right-of-way and is consequently a matter on which the bankers and financiers must express their approval before work actually gets under way.

Mr. Robertson says he believes the work will be started within five years and will be completed within the ten-year period.

On May 9 the *New York Times* said:

Wall Street expects an announcement soon of plans for the electrification of the New York Central Railroad main line between New York and Buffalo. It is said that the large initial cost of electrification is the main obstacle in the way of realization of such a project, and the financial district reports indicate that \$100,000,000 annually would be required to be spent for three years to complete the work.

Nine Cents in Sioux City

A ten-day notice of an increase in its fares in Sioux City, Iowa, to 9 cents, with three tokens for 25 cents, effective May 10, was given recently by the Sioux City Service Company. Children's fares are 5 cents.

W. J. Bertke, vice-president and general manager, said that continuous decrease in revenue and increased taxation, necessitated the fare increase. Passenger revenue last year was \$246,716 less than in 1926. Under its franchise the company is allowed a 6.5 per cent return upon its appraised valuation of \$5,186,533 and the 8-cent fare, in force the last fifteen months, has failed to meet this limit. The operating return last year was \$211,806 below the \$337,125 permitted under the franchise. Operating revenue last year was \$814,535, of which all but \$6,887 came from passenger tariffs. The operating expense was \$696,758.

Recent Bus Developments

Another 25-Cent Line in Pittsburgh

Advantage was taken of the idea of direct mail advertising by the Pittsburgh Motor Coach Company, Pittsburgh, Pa., in connection with the establishment on April 23 of service on the company's fifth de luxe motor coach line, which connects the Highland Park district, a high-class residential section, with the downtown business section of Pittsburgh. The new route intersects one of the present lines in the East Liberty district, at which point transfers are issued to and received from the East Liberty line. The new route is 7 miles long. The fare is 25 cents with 21 tickets for \$5.

The letter to prospective customers was signed by T. W. Noonan, general manager. It was as follows:

Commencing Monday, April 23, motor coach service will be started between downtown Pittsburgh and the Highland Park district.

The new route will operate between the East End terminal, Callowhill Street and Highland Avenue, and the downtown terminal, Liberty Avenue at Grant Street. This route will operate via Euclid and St. Clair Streets, through the Shadyside and Oakland districts to downtown Pittsburgh via the Boulevard of the Allies as indicated by the inclosed schedule.

The fare will be 25 cents one way, with tickets on sale at 21 for \$5.

Transfers will be issued if you wish, to the present inbound East Liberty route (passengers to change at Penn Avenue and Highland Avenue) upon payment of regular fare, and will also be accepted from the outbound East Liberty route at Penn Avenue and Highland Avenue.

Powerful, roomy, comfortable and safe coaches are to be used, the very latest and best in motor coach design and manufacture.

Relieve yourself of the inconvenience, worry and nerve strain that always go with driving, by riding the coaches.

The motor coach company is a subsidiary of the Pittsburgh Railways.

Another Bus Purchase Reported in Washington

Purchase of the Montgomery Bus Line by the Washington Railway & Electric Company, Washington, D. C., is said to be under way. The bus line is owned and controlled entirely by citizens of Rockville. It was started some years ago as a jitney undertaking. Four buses now make thirteen round trips a day between Washington and Rockville, Md. They enter Washington via Massachusetts Avenue, and run to the bus terminal at Ninth and E Streets. Only recently the bus line obtained from the Maryland Public Service Commission the right to pick up passengers at any point along its route. Railway officials are said to have indicated that the bus service would be amplified and ar-

rangements made for transfers to the lines of the Washington Railway & Electric Company in the city. Despite these negotiations there is said to be no intention to abandon the Georgetown-Rockville Railway. On the contrary, the company is said to plan to improve the roadbed and renovate the cars. The Washington Railway & Electric Company recently took over the privately-owned bus route to Cheverly, Md., and is improving service to that suburban community.

Would Operate in San Leandro

Certain officers of the Key System Transit Company, Oakland, Cal., have applied to the California Railroad Commission for authority to operate a bus service in the city of San Leandro. It is the intention of the applicants to transfer the said operating right to a corporation which is being organized, and will be known as the Key System-San Leandro Bus Company.

Transfer in Binghamton

The Triple Cities Bus Lines, owned by Edward A. Dorey, has been granted permission by the Endicott Board of Trustees to transfer the Binghamton-Endicott bus routes to the Binghamton Railway Bus Lines, Inc., subsidiary of the Binghamton Railway, which now leases the bus line. The railway has been operating the route for some time and now desires to purchase it. It is necessary to secure permission from the communities through which a route passes before formal application is filed with the New York Public Service Commission requesting the transfer of franchise.

Symbolic Radiator Caps in Washington

NEW radiator caps, consisting of a miniature copy of the dome of the Capitol with wings on either side and the letters "D. C." on a plate in front have made their appearance on the buses of the Washington Rapid Transit Company, Washington, D. C. The device was designed by Harry Burlingame, a student at McKinley Manual Training High School, and was adjudged the best of all the designs submitted in the recent contest. The cap has been worked out in polished aluminum. The rules of the contest called for a device "symbolic of the District of Columbia as the Nation's Capital," and the winged dome was considered particularly appropriate. Incidentally, Mr. Burlingame received \$100 for his suggestion.

7½-Cent Fare Suggested on Philadelphia Substitute Line

Bus operation at a 7½-cent fare rate will be attempted by the Philadelphia Rapid Transit Company, Philadelphia, Pa., for the first time under the authority of two ordinances approved by the transportation committee of the City Council. The measures contemplate substitution of bus service for trolley lines A and B, one line operating from Bethlehem Pike and Germantown Avenue to City Line and Perkiomen Avenue and the other running over Perkiomen Avenue and Hillcrest Avenue to Erdenheim. The new bus routes, X and X-1, when finally approved by the Council, also will provide free transfer privileges for interchange with electric railway route 23.

A companion ordinance, authorizing the removal of tracks from the streets where the railway service will be abandoned, also was ratified by the committee. The usual bus fare is 10 cents, with 3 cents additional for exchange privileges. Coleman Joyce, of Philadelphia Rapid Transit counsel, pointed out that the northwest service merely contemplated a substitution of buses for trolleys and that no bus route through new territory was being established, as in the northeast. The advocates of the plan said they had taken into account the fact that the Public Service Commission might decline to approve the contracts after passage by City Council on the ground that the fare was not consistent with the established charge for bus service.

St. Louis-Alton Route Sought

A permit has been asked of the Missouri Public Service Commission by the Alton Railway, a subsidiary of the East St. Louis Railway, East St. Louis, Ill., to operate buses between St. Louis and Alton. The route would cross the Missouri River and the Mississippi River on new privately owned bridges being built near Fort Bellefontaine and Alton. The granting of the permit by the Missouri Public Service Commission will enable the Alton Railway to place in service on this new route the de luxe Blue Goose Motor Coaches.

Extension of Coach Route in Los Angeles Desired

The Los Angeles Railway and the Pacific Electric Railway have filed a joint application with the California Railroad Commission for permission to extend their Sunset Boulevard motor coach line. Permission is also asked to increase the one-way fare to 15 cents, to apply between Fifth and Hill Streets and Sunset Boulevard and Crescent Heights Boulevard; one-way fare between Fifth and Hill Streets and Sunset Boulevard and Western Avenue, 10 cents; one-way fare between Sunset Boulevard and Crescent Heights Boulevard and First Street and Vermont Avenue, 10 cents.

Commission Powerless to Act in New York-Canada Case

The Public Service Commission of New York has decided that it is without authority to entertain the petition by Melville L. Van Dyke for a certificate covering operation of a bus line from Shelton Square over certain streets in Buffalo as a part of a line to Fort Erie and Bridgeburg, Canada. A memorandum by Commissioner Pooley says:

From the cases considered by the United States Supreme Court and the courts of this state it appears that while bus operators, engaged exclusively in interstate business, are subject to regulation by the state to insure safety and convenience and the conservation of the highways and may be required to contribute to their cost and upkeep, they are not required to obtain either a consent from the local authorities or a certificate of convenience and necessity from the commission.

Van Dyke has been operating under a revocable consent by the city of Buffalo. The International Railway contended that it now afforded adequate service to the Peace Bridge and that operations by Van Dyke from Shelton Square would deprive it of revenue.

Boston-Lowell Route License Sought

The Eastern Massachusetts Street Railway, after an attempt to establish bus service between Boston and Lowell, Mass., has again applied for a license to operate this service. If permitted the proposed route will function via Cambridge, Arlington, Winchester, Woburn, Burlington, Billerica, Chelmsford and thence to Lowell. Trustees of the company announce that the plan is a restoration of a service rendered by the railway from Oct. 1, 1924, to May 1, 1925, but withdrawn at the request of the Boston & Maine.

Fred A. Cummings, vice-president of the Eastern Massachusetts, said that when the foundation for this route was laid four years ago the Boston & Maine made no protest although public hearings were held in each place; that his company invested \$200,000 in motor coaches but the Boston & Maine Railroad protested that the route was cutting into the railroad's revenues between Lowell and Boston. He declared that, in the public interest, his company is willing to join with the steam road in a joint operation between Boston and Lowell on equal terms.

Would Make Substitution on California Line

The Pacific Electric Railway, Los Angeles, has applied to the California Railroad Commission for authority to abandon service and remove its tracks on its Upland-Ontario line in the city of Ontario. A certificate of public convenience and necessity for the operation of a motor coach line between the cities of Upland and Ontario in place of the present railway service is sought.

Financial and Corporate

Segregation of Indianapolis & Cincinnati Properties Proposed

Two new corporations will be formed out of the property of the Indianapolis & Cincinnati Traction Company to serve the central southeastern part of Indiana. Charles T. De Hore and Leroy E. Eastman, purchasers of the railway at foreclosure, are reported to be planning to spend more than \$425,000 in the development of the property.

A company to be named the Indianapolis & Southeastern Railway will be formed, subject to the approval of the Public Service Commission, through the combination of two divisions of railway lines running, respectively, from Indianapolis to Rushville and Connersville, and to Shelbyville and Greenburg.

The second company, to be called the Southeastern Indiana Power Company, will be formed by the combination of power distribution business in twenty communities and towns with five small power companies serving twelve other towns in adjacent territory which had been bought in recently by Messrs. De Hore and Eastman.

Approval of \$1,000,000 Increase in Bonds Sought

A special meeting of the stockholders of Monongahela Street Railway, Pittsburgh, Pa., has been called to convene on May 29 for the purpose of approving of the proposed increase of the indebtedness of the company from \$4,400,000 to \$5,400,000 to provide funds to take up, pay off and discharge the first mortgage 5 per cent 30-year gold bonds of the company, dated June 1, 1898, and maturing June 1, 1928, consisting of an original issue of bonds in the face amount of \$1,000,000. The Monongahela Street Railway is included in the system of the Pittsburgh Railways.

Connecticut Company Sells Millerton Electric

The Central Hudson Gas & Electric Corporation, Poughkeepsie, N. Y., has applied to the Public Service Commission for authority to acquire the outstanding capital stock of the Millerton Electric Light Company, serving Millerton and the town of Northeast, and for approval of the merger of the Millerton Company with the Central Hudson Gas & Electric Corporation. The petition states that the capital stock of the Millerton company is owned by the Connecticut Company. It is planned to purchase the Millerton company's stock from the Connecticut Company and also to purchase a transmission line in Northeast forming part of a transmission line between Poughkeepsie and Falls Village, Conn., which connects the Central Hudson Company and the Connecticut

Company, for \$105,000 in cash and issuance to Connecticut Company of 2,000 shares of the no-par common stock of the Central Hudson Company. The Millerton and the Poughkeepsie companies serve adjacent territories.

Operating Profit on Michigan Suburban Line

The United Suburban Railway, the "shortest electric railroad with the longest list of stockholders in the United States," held its first annual meeting recently and reported an operating profit of \$2,950 at the close of its first seven months of service. This report covers operations from July 22, 1927, to Feb. 29, 1928, of the company, which leased the right-of-way of the Holland division of the Michigan Railways when that division discontinued operations on Nov. 17, 1926. It now operates its line from Grand Rapids to Jenison, 9 miles, with a 25-minute service. The stock in the company is held by the residents in the villages and along the right-of-way that the road serves.

No cash dividends were declared at the annual meeting but President E. F. McCarrick said he hoped that in a year the company would be in a position to pay a cash dividend on the investment.

Secretary Slaght reported that Grand Rapids banks, with faith in the project, had loaned the new company \$12,500 to start operations and that these loans had been reduced to \$9,000. Further, with \$7,450 soon to be available on unpaid pledges for stock the company would almost be in a position to pay off its indebtedness at the banks. His report showed the company collected \$27,198 in fares and \$500 income from all other sources during the first seven months. Operating expenses were \$24,747, and for repairs and maintenance \$2,566 was spent. The company's net worth on Feb. 29, 1928, was \$50,399.

Improvement in industrial conditions in Grand Rapids explained the satisfactory earnings in January and February. The construction of 40 modern homes along the interurban line in 1927 is a major development to the credit of the interurban company. The contractors decided to build these houses after the interurban line became a certainty. Many other homes have been erected in the suburban territory since the line resumed operations, giving fifteen-minute rush-hour service and 25-minute shopper service.

The suburban company has one competitor, the Andringa & Datema Bus Line, Inc., which made an offer in writing to the annual meeting to sell its franchise and equipment to the railroad for \$57,000. Stockholders of the railroad were only lukewarm toward the bus proposal, but a committee was appointed by President McCarrick to investigate.

Ohio Interurban Makes Good Showing

Both passenger and freight service developed intensively. Many obstacles overcome in first full year of operation of the Cincinnati, Hamilton & Dayton Railway

TRAFFIC and revenues of the Cincinnati, Hamilton & Dayton Railway, Dayton, Ohio, were adversely affected during the year by the general economic situation in the territory in which it operated. Beginning in March, 1927, a marked reduction in the volume of employment and output of the manufacturing enterprises in the Miami Valley, as elsewhere in the United States, was evident and became more pronounced as the year advanced. The tonnage shipments of the manufacturing enterprises were reduced in proportion substantially like the reduction in the man-hours worked; the volume of passenger traffic moving between points in the Miami Valley was also adversely affected. In Hamilton the reduction in the volume of employment was unusually severe, due, in part, to the partial shut-down of the plant of the Ford Motor Company throughout the greater part of the year. The total man-hours paid for by the larger manufacturers in Hamilton in 1927 were 81.5 per cent of those in 1926. Under these conditions travel decreased on local lines in Hamilton, the revenues being 6.1 per cent below those in 1926.

The results of operation during the year 1927 (the first full year of operation by the company) are as follows:

CINCINNATI, HAMILTON & DAYTON OPERATING RESULTS	
Gross revenue from railway operation...	\$1,065,056
Operating expenses including maintenance, rentals, general taxes and general interest.....	934,358
Net operating revenue.....	\$130,697
Other income.....	2,270
Total income.....	\$132,968
Interest on bonds.....	*63,846
Balance available for depreciation and surplus.....	\$69,121
Appropriation to renewal and replacement reserve.....	45,600
Balance transferred to surplus.....	\$23,521

*After deducting credit for interest during construction—\$16,466.

Despite this situation the passenger revenues of the interurban line in 1927 were 2.1 per cent in excess of those in the preceding year, while the total tons of freight handled in 1927 were 26.2 per cent in excess of the tonnage handled in 1926 and the freight revenues were 23.2 per cent greater in 1927 than in 1926.

Naturally it is a matter of gratification to the management that in the face of the economic conditions which prevailed during 1927 the gross revenues from operation of the entire property were 4.9 per cent greater than in 1926.

During the year 1927 the company secured the privilege of participation in the joint freight tariffs promulgated by the Central Freight Association, making possible better service to the manu-

facturers and shippers of the Miami Valley and the development of traffic which theretofore could not be attracted.

On Aug. 1, 1927, the company established a freight receiving station in the Cincinnati Terminal Warehouse in the heart of the wholesale district of Cincinnati. Prior thereto the only freight terminal which the company possessed in Cincinnati was at Cumminsville at the southern terminus of the interurban line, approximately 5 miles from the center of Cincinnati. The new downtown freight station attracted a large volume of business not previously obtainable which has steadily increased from month to month. Freight is transferred between the downtown terminal and Cumminsville by truck.

On Feb. 1, 1927, Richard Breckinridge was elected vice-president in charge of traffic. Under his direction the traffic department was enlarged substantially and the work of actively building up and soliciting traffic has been prosecuted vigorously. The results secured are reflected in the remarkable development of the freight tonnage and revenues in the face of a period of industrial depression.

TRAFFIC RESPONDS TO NEW ROLLING STOCK

On May 6, 1927, the company introduced new modern de luxe suburban type equipment on its Dayton city lines and at the same time increased the frequency of service on these lines approximately 25 per cent. As a result of this improved service and a vigorous publicity policy a very substantial and immediate increase in traffic on these lines was enjoyed while, at the same time, a marked reduction in operating expenses was effected. Similar cars, operated by one man, were introduced on July 15 into the local service between Dayton and Miamisburg. The total number of revenue passengers carried on the Dayton City-Dayton-Miamisburg lines was 14.6 per cent greater in 1927 than in the preceding year. On June 26 new interurban passenger equipment was placed in service on the interurban line between Dayton and Cincinnati. On the same day a local half-hour service was established between Hamilton and Cincinnati. This materially increased the volume of business carried between these cities.

On July 25 eight new automatic substations, embodying the latest features of construction were placed in operation. Their aggregate rated capacity was 3,800 kw. The old, obsolete and relatively inefficient 25-cycle substations were shortly thereafter dismantled and the equipment sold. During the first five months of 1927 the company generated 4,673,683 kw.-hr. at an average cost of 1.680 cents per kilowatt-hour.

During the last five months, in which the new substations were in operation and power was secured entirely from the Union Gas & Electric System, the company purchased 4,139,901 kw.-hr. at an average cost of 1.180 cents per kilowatt-hour. During June and July, in which a portion of the power used was generated and a portion thereof purchased, the total kilowatt-hours purchased and generated were 1,701,206 at an average cost of 1.798 cents per kilowatt-hour. The average consumption per car-mile was 3.70 kw.-hr. in 1927 compared with 4.35 kw.-hr. in 1926.

MOST MODERN SHOPS OF THEIR KIND

The main car shops at the time of the organization of the company were situated at O'Neils, about 5 miles south of Dayton. These shops were of inadequate capacity and were most poorly equipped as regards machine tools and other labor-saving devices. After much consideration the company purchased two large, modern steel and concrete shops and approximately 12 acres of ground on the main-line tracks at Moraine City, together with a full equipment of machine tools. Title to these shops was acquired on April 23. Immediately thereafter the work of installing tracks and making other changes necessary to fit them for their new uses was undertaken. On Aug. 15 the O'Neils shops were abandoned and the shop forces transferred to the new Moraine shops. The old car shops at O'Neils, and approximately 10 acres were sold upon advantageous terms. As a result the company now possesses what are probably the most modern car shops of any interurban in the United States.

Additions and betterments aggregating \$1,424,306 were made as follows:

ADDITIONS AND BETTERMENTS OF CINCINNATI, HAMILTON & DAYTON	
Paved track reconstruction in Hamilton.	\$49,272
Other track construction and reconstruction	19,309
Telephone and distribution system reconstruction.....	6,887
Construction and reconstruction of stations and miscellaneous buildings.....	6,863
Roadway equipment and automobiles.....	9,310
New freight facilities at Hamilton, Cumminsville, etc.....	11,917
Eight new 60-cycle substations, including buildings, equipment, land, etc.....	176,432
Purchase and equipping new Moraine shops and offices, including yard tracks, and additions to Hamilton shops.....	569,647
Purchase of ten interurban cars, ten suburban-type cars, one freight motor, 25 freight box cars, reconstruction of certain Hamilton City equipment, etc..	546,780
Miscellaneous items.....	16,142
Interest during construction.....	11,747
	\$1,424,306

During the year the company sold \$500,000 par value of its first and refunding mortgage 6 per cent gold bonds, due 1941, at par and accrued interest to the reorganization managers as provided in the plan and agreement of reorganization. The company also sold upon favorable terms an issue of \$450,000 par value of equipment trust certificates, issued under the so-called Philadelphia Plan, due serially from Oct. 1, 1927, to April 1, 1937, the proceeds being used to pay in part the cost of the new passenger and freight equipment.

In this connection it should be explained that the Cincinnati, Hamilton & Dayton Corporation is a holding company owning all of the common stock (except directors' qualifying shares) of the Cincinnati, Hamilton & Dayton Railway.

No dividends have been declared or received on the stock of the railway owned by this corporation, and hence

CINCINNATI, HAMILTON & DAYTON CORPORATION AS OF DEC. 31, 1927	
Assets:	
Cash.....	\$10,075
Investments.....	3,599,460
Incorporation expense.....	16,093
	<hr/>
	\$3,625,628
Liabilities:	
Prior debenture bonds due 1976.....	\$2,135,000
Adjustment income bonds due 1976.....	\$875,000
Less treasury bonds.....	26,250
Surplus—represented by 24,500 shares of no-par common stock of which, 105 shares are held in the treasury.....	651,878
	<hr/>
	\$3,625,628

Note—In the item "cash" is included the balance remaining in the hands of the reorganization managers otherwise unappropriated which upon the completion of the work of the managers is to be delivered to the corporation for its general corporate purposes.

no interest has been declared payable upon the debenture bonds or on the adjustment income bonds of the corporation. Under the provisions of the indentures securing the bond issues the coupons maturing prior to Jan. 1, 1930, are void in the absence of affirmative action prior to the maturity dates thereof by the board of directors declaring the payment of interest thereon.

The reorganization managers, constituted under a certain plan and agreement of reorganization for the railway property of the Cincinnati & Dayton Traction Company, dated Oct. 1, 1925, practically completed their work before the close of the year but were not able to wind up their affairs and file their final accounts with the Wilmington Trust Company, Wilmington, Del., reorganization depository, prior to the close of the year. Under the plan and agreement of reorganization any balance remaining otherwise unappropriated is to be delivered by the managers to the corporation for its general corporate purposes and any securities of the corporation remaining in the hands of the managers, free from liens or other charges, are to be assigned and delivered to the corporation to be held by it as treasury securities.

Shelburne Falls Road Sold

Michael J. Brophy has sold at public auction for the trustees of the Shelburne Falls & Colrain Street Railway, Shelburne Falls, Mass., all the real estate, consisting of office buildings, power houses, machine shops, carhouses and rights-of-way belonging to the company, located in the towns of Shelburne Falls, Colrain and Buckland, to Carleton P. Davenport, Shelburne Falls. In addition Mr. Davenport also purchased all of the personal property, tracks, cars and other equipment of the railway.

Sault Ste. Marie Buys Line

The Sault Ste. Marie Traction Company, Sault Ste. Marie, Mich., became a community enterprise on May 1. The new owners, mainly business interests, industrial interests and working men, hope that the road can be made self-sustaining. According to the secretary there will probably be about 400 stockholders, of whom 250 will each hold one \$10 share. The former owners of the Sault Ste. Marie Traction Company, the Algoma Steel Corporation and Lake Superior Corporation, planned to suspend service, but realizing that it would be detrimental both to the business and industrial interests of the community to stop the service, these companies sold the road at its scrap value to the community. The system comprised 7 miles of track.

Muskegon Interurban Out of Business

The Grand Rapids, Grand Haven & Muskegon Railway, serving a territory in Muskegon County and northern Ottawa County out of Grand Rapids, Mich., ceased operations April 18. For 27 years this company transported thousands of citizens between the ten cities and villages along its lines and hundreds of thousands to the Lake Michigan beaches in the Ottawa and Muskegon country regions.

The death knell of the Muskegon interurban was sounded when Federal Judge Fred M. Raymond in United States District Court in Grand Rapids signed an order on March 24 ending the life of the railway on petition of the Guaranty Trust Company, New York. This petition asked that the Grand Rapids Trust Company, which had been receiver since July 31, 1926, be authorized to end its endeavors to put the road back on a paying basis. The Guaranty Trust Company was trustee for holders of \$1,500,000 in bonds upon which interest amounting to \$75,000 annually had been defaulted for a year prior to the receivership.

A report showed that on July 31, 1927, the close of the first year under the receivership, the interurban lost \$24,768, not including the interest on the bonds, and that these losses had multiplied during 1928 in spite of a valiant fight to avoid further deficits. Receiver's certificates amounting to \$30,000 had been issued to provide operating and other expenses up to the time the company ceased operations. More than \$20,000 is owed to the state of Michigan and counties through which the road operated.

Since the interurban company ceased operations its bus line has been more or less in public print. First, O. W. Hess, engineer of the Kent County Road Commission, proposed conversion of the interurban's right-of-way into a wider US16 trunk line where the railway now runs close to the highway. This recommendation is now being considered by the Highway Commission. Then the Greyhound bus line petitioned for a

franchise for its buses to operate on a route paralleling the old interurban line. Previously the interurban company had blocked this petition by supplementing its car service with rapid bus service on an hourly schedule. Finally, three applications were made to the State Utilities Commission for permission to operate freight-bearing motor vehicle lines connecting Grand Rapids, Grand Haven, Muskegon and Holland by the receivers for the Michigan Electric Railway, the Star Transfer Company of Grand Rapids and William Bronsema, Grand Rapids. The Grand Rapids Trust Company, receivers for the Muskegon interurban, opposed the petitions pending a deal whereby the Greyhounds might purchase the bus line service of the Muskegon company. Recently the deal was closed by the Public Utility Commission order whereby the Greyhound lines take over the buses and route of the interurban company known as the Lake Line Company. New schedules went into effect on May 7. They call for hourly service both ways.

\$38,000,000 Spent in Boston

There was expended by the trustees of the Boston Elevated Railway, Boston, Mass., between July 1, 1918, and Dec. 31, 1927, upon road and equipment, about \$38,375,000 as follows:

Cars and buses.....	\$18,779,000
Carhouses, shops and garages.....	6,288,000
Power houses and transmission of electricity.....	4,587,000
Surface lines (track and line betterment)	5,350,000
Elevated structures and appurtenances	2,128,000
Miscellaneous improvements.....	1,243,000
	<hr/>
Total.....	\$38,375,000

When added to the total of \$3,434,000 which had been expended upon road and equipment in excess of any capital issues at the time the trustees took charge of the railway property on July 1, 1918, it made a total of about \$42,000,000 to be provided for during the first 9½ years of public control. The sources were:

Part of the proceeds from the sale of preferred stock which the stockholders were compelled to subscribe before the public control act could take effect.....	\$2,000,000
Proceeds from the sale of the Cambridge subway to the Commonwealth.....	7,868,000
Available from the depreciation charge July 1, 1918, to Dec. 31, 1927.....	21,680,000
Approximate amount received in settlement of fire insurance losses.....	1,000,000
The approximate cash proceeds resulting from the sale of real estate properties	1,850,000
Additional bonds issued against the preferred stock which was sold under provisions of the public control act..	3,000,000
Additional Boston Elevated bonds issued Feb. 1, 1927.....	1,926,000
	<hr/>
Capital provided to Dec. 31, 1927....	\$39,324,000

Illinois Line Purchased

The electric railway lines of the Central Illinois Public Service Company running from the Southern Illinois State Hospital, Anna, to the tracks of the Illinois Central Railroad at Anna, were purchased recently by the Anna-Jonesboro Railroad. The price paid was \$134,399.

Book Reviews

Transit and Transportation

By H. M. Lewis with supplementary reports by W. J. Wilgus and Daniel L. Turner. Published by Regional Plan of New York and Its Environs, Volume 4, New York, N. Y. 226 pages.

Regional survey Vol. 4 is a sequel to that on traffic. Under the transit problem present conditions are discussed, the systems in New York City and in the suburban territory are described and an explanation is made of the relation of buses and surface transit lines to the rapid transit system. Under the transportation problem are included the railroad system, the waterway system and the airway system.

Part two of Volume 4 covers a study of port and industrial areas and the possibilities of the Hackensack Meadows.

In this volume Mr. Lewis has completed an interesting and valuable diagnosis of existing conditions. The supplementary reports of William J. Wilgus and D. L. Turner embrace a study of transportation in the New York region and the requirements of New York City rapid transit. The volume contains many maps, charts and diagrams.

The report presents the findings and conclusions of a large corps of experts in the fields of economic research, engineering and community planning, who have for six years conducted an intensive study of the situation in New York City and its 400 neighboring cities and villages, preliminary to the drafting of a plan for the future development of this city and the suburbs linked with it economically. It analyzes the plans contemplated or in process of execution for increasing the rapid transit facilities of northern New Jersey, Westchester County and Long Island. A conclusion is drawn that additional facilities should be planned to encourage a better balanced distribution of industry and population.

Bills of Lading

By Ernest W. Hotchkiss, LL.B. The Ronald Press Company, New York, N. Y. 287 pages. Price, \$5.

As Mr. Hotchkiss defines it, a bill of lading is a written acknowledgement of the receipt of personal property and a contract to transport and deliver it, at a certain place, to a certain person or his order, and when to order, is a document of title, acceptable for credit. It has four functions because it is: (1) a receipt; (2) a contract, and when made to order (3) a document of credit, and (4) an instrument of credit. Transportation contracts are of such vital importance to corporation executives, traffic managers, railroad officials, bankers, lawyers and shippers generally that a need exists for a statement of the present laws pertaining to bills of lading. "Bills of Lading" is an attempt to supply that need by bringing together references to related statutes concerning bills

of lading; decisions of courts; forms, regulations, and rules as published in the tariff structures of the carriers and approved by the Interstate Commerce Commission, all of which becomes a part of the contract of shipment within the federal transportation act. In addition to a table of cases cited, given in the early part of the volume, considerable material, with forms of the several bills of lading, and structures concerning them, has been included in appendices for convenient reference.

Electric Traction on Italian Railways

(La Trazione elettrica sulle ferrovie Italiane). Published by the Minister of Railways and Communication in connection with the Volta Centenary in 1927. Board covers, illustrated. 194 pages and 2 large maps.

In a country like Italy, where coal is expensive but waterpowers are abundant, it is not surprising that a great deal of attention should have been paid to railway electrification. In fact, in many forms of railway electrification, Italy was a pioneer. Thus, the Milan-Varese third rail direct-current road, installed in 1901 and 1902, was one of the most important of its kind up to that time, and the Lecco-Sondrio-Colico three-phase railway, built in 1902, was the pioneer of three-phase operation on a large scale. Up to Sept. 1, 1927, there had been built and put into operation by the Italian government heavy electric traction lines comprising 1,149.8 km. (718.5 miles) of route and 2,399 km. (1,499 miles) of track, and there was in course of equipment 257 km. (161 miles) of route and 744 km. (465 miles) of track. These lines in course of construction included the Foggia-Benevento line to be operated with 3,000 volts direct-current, and the Rome-Sulmona line to be equipped with 10,000-volt three-phase.

These figures, with a great deal of other very interesting information, are contained in a book recently issued by the Minister of Railways and Communication of the Italian government. It is divided into five sections as follows: General statistics and discussion; detailed information of the electrical equipment and distribution system of each of the lines of the State railway system; data on the sources of electric power supply; detailed information of the electrical locomotives; brief information in regard to 33 interurban electric railways not forming part of the State railway system. These lines have a total length of 1,005 km. (628 miles).

The book is very well illustrated, among the prints being two large maps. One shows all of the interurban and trunk electric railway lines in Italy. The other is on a larger scale and shows the electrified lines in the Milan-Genoa-Leghorn District, with their transmission lines.

Aladdin, U. S. A.

By Ernest Greenwood. Harper & Brothers, New York, N. Y. 265 pages. Price, \$2.50.

It was an ambitious task upon which Mr. Greenwood entered—that of attempting to set forth as briefly as possible something of the history and development of the spirit of electricity, together with its social, industrial and political implications and the tremendous change which it has brought about in our daily lives. He has succeeded to a degree that might at first seem improbable. To keep it within the boundaries of reasonable length, the book has, of course, been confined to the barest outline of the contribution made by applied electricity to the social and material welfare of the nation, but the choices which the author has made are judicious and the balance of the subjects is well preserved. This is all the more praiseworthy since it is apparent that each chapter might easily be developed into a number of volumes. There is some history, but not too much. There are some economics, but not too much. There is some technology, but not too much.

The foreword is by Thomas A. Edison. He says that despite the fact progress has been so rapid we may require a breathing spell in which to consolidate our gains, the electrical development of America is only well begun. If this statement needed to be borne out, Mr. Greenwood has done it in his own text. It is not always easy to agree with the appraisal on the jacket of a book, but in this case the text bears out the statement that Mr. Greenwood has written a fascinating record of the wonderful accomplishments of electricity and of the way it has contributed to American progress and prosperity.

American Electric Railway Association Proceedings for 1927

Published by American Electric Railway Association, 292 Madison Avenue, New York, N. Y.

The 1927 Proceedings contain a complete report of the twentieth annual convention held at the Public Auditorium, Cleveland, Ohio, from Oct. 3-7, 1927. Five volumes have been issued covering the work of the American Association and its affiliated bodies, the Transportation and Traffic Association; Claims Association; Accountants Association and Engineering Association.

500 Representative Public Utility Advertisements

Public Utilities Advertising Association, Jackson, Mich. Single copies \$10. In quantities of five or more, \$7.50 each.

The 1928 edition of the compilation issued annually under the above title is ready for distribution. The book is published by the Public Utilities Advertising Association, of which Donald M. Mackie, Jackson, Mich., is president this year. This is a collection of utility advertisements selected from among thousands submitted, by a competent committee.

Personal Items

A. E. Reynolds Heads Missouri Association

A. E. Reynolds, vice-president and general manager of the Springfield Traction Company, Springfield, Mo., was elected president of the Missouri Association of Public Utilities at the 22nd convention, held in Jefferson City, Mo., April 26-28. In 1926 Mr. Reynolds was elected to the presidency of the Midwest Electric Railway Association. This new honor adds something more to the active career of a man who has been identified with public utilities for many years. Before going to Springfield in 1923, Mr. Reynolds had been general manager of the United Traction Company, Albany, N. Y., and the Hudson Valley Railway, Glens Falls, N. Y. A review of his career was published in *ELECTRIC RAILWAY JOURNAL*, issue of July 24, 1926.

A. V. Bennett Vice-President of West Penn Power

A. V. Bennett, connected with the West Penn System, Pittsburgh, Pa., since 1918, has been elected vice-president of the West Penn Power Company. Before he entered the service of the West Penn, Mr. Bennett was associated with the American Water Works & Electric Company, Inc., as assistant superintendent of the Birmingham Water Works Company, Birmingham, Ala., and later as superintendent of the Arkansas Water Company at Little Rock, Ark. In 1918 he was transferred to the Pittsburgh office of the West Penn System as assistant to the president, later being made vice-president of the coal companies and several other subsidiaries.

H. G. McEldowney Added to G. E. Directorate

Henry C. McEldowney, president of the Union Savings Bank and the Union Trust Company, both of Pittsburgh, was elected a director of the General Electric Company at the organization meeting of the board held at Schenectady on May 8.

The stockholders, at their annual meeting, authorized the additional director, increasing the total from twenty to twenty-one. Other directors were re-elected. Mr. McEldowney is a director of the Mellon National Bank of Pittsburgh and of the Pittsburgh Chamber of Commerce. All other officers of the company were re-elected.

At noon on the day of the meeting, in the presence of 20,000 employees of the company and directors, a bronze tablet honoring the memory of Charles A. Coffin, founder of the company, was unveiled by Miss Alice Coffin, a

daughter. At this ceremony, Owen D. Young, chairman of the board, presided and the principal address was by E. W. Rice, jr., honorary chairman of the board and one of the oldest living associates of Mr. Coffin.

Changes on Sacramento Northern

Changes in the personnel of the Sacramento Northern Railway, San Francisco, Cal., are as follows:

Charles Elsey is now serving as vice-president; W. G. Bruen, secretary; D. C. DeGraff, auditor. J. R. Parke was formerly secretary and auditor. H. K. Faye is freight traffic manager and Bode K. Smith passenger traffic manager. These duties were formerly performed by R. D. Williams with the title of traffic manager.

ARTHUR J. METZDORF has been made manager of the Wildwood Amusement Park of the Twin City Lines on White Bear Lake east of St. Paul on the Stillwater suburban railway line, succeeding his father, the late P. J. Metzendorf. He has been a supervisor for the St. Paul City Railway.

Obituary

Edward W. Moore

Edward W. Moore, builder of city railways and pioneer in the promotion of interurban electric railways, died on May 8 at his home in Cleveland, Ohio, after a long illness. Mr. Moore had been identified with electric transportation in Cleveland and northern Ohio since electricity replaced the horse as motive power on city railways. He relinquished his last active electric railway connection when he retired from the presidency of the Lake Shore Electric Company several years ago.

Mr. Moore's connection with electric railway finance started in 1889, when he purchased stock of the East Cleveland Railroad. In 1891 he was a member of a syndicate which purchased and re-equipped the Wheeling Traction Company and another syndicate which bought the Toronto Railway and changed it from horse to electric power. Three years later the Everett-Moore syndicate built the Akron-Cleveland & Bedford interurban line, which later obtained control of the railways and the power and light plants in Akron and Cuyahoga Falls. These properties were the nucleus out of which later was evolved the Northern Ohio Power & Light Company.

In 1898 the Everett-Moore syndicate obtained control of the Cleveland Electric Railway, comprised of most of the independent lines in Cleveland, and op-

erated it until the Tayler grant became effective in 1910. During this period Mr. Moore and his associates, among them the late John L. Stanley, went through one of the trying periods of railway history in Cleveland in which the late Tom L. Johnson as Mayor was one of the participants. The Everett-Moore syndicate built the Cleveland, Painesville & Eastern Railway, which recently passed out of existence, and the Lake Shore Electric Railway. After his retirement from the presidency of the London Street Railway, London, Ont., he gave his attention to these properties and to the Detroit United Railway, of which he was vice-president for many years.

In addition to his interurban activity he also promoted nine independent telephone companies in Ohio.

Mr. Moore was born at Canal Dover, Ohio, 64 years ago. He is survived by his wife, a son and three daughters.

Paul T. Brady

Paul T. Brady, special representative in New York of the Westinghouse Electric & Manufacturing Company, with which he had been associated for 34 years, died suddenly on May 3 in Portland, Ore. He was 71 years old.

Mr. Brady was one of the pioneers of the electric light and power industry. Combining technical electrical knowledge with financial ability, he has left behind him more than a score of successful electrical systems. New York State owes to him much of its telephone system, electric power and electric railways. His work in Georgia, West Virginia and Alabama is of great economic value to those states. In spite of his years he was actively engaged in development work up to the very last day of his life.

After he was graduated from Phillips Exeter Academy Mr. Brady taught school for a brief period. Since 1881 he had been engaged in various branches of the electrical industry. In the Eighties he was with the American Telephone & Telegraph Company and helped the telephone system through the southeastern portion of New York State, also building some of the first electric light plants in this territory. In 1890 he joined the Thomson-Houston organization and became its manager for that state and the Middle West.

In 1894 Mr. Brady was appointed New York State manager for the Westinghouse concern, with headquarters at Syracuse. In 1907 he was transferred to this city as special representative.

Among the public utilities which Mr. Brady founded, reorganized or helped to develop, are the Rochester Railways, Rochester Gas & Electric Company, Niagara, Lockport & Ontario Power Company, Central Georgia Power Company, Virginia Power Company, Missouri River Power Company and South-eastern Light & Power Company. He brought into operation the 60,000-volt long-distance transmission line to carry power from Niagara Falls to Syracuse.

Manufactures and the Markets

Foreign Trade Combinations Can Be Made Valuable

Foreign business concerns have made great progress in consolidated trade effort. Exporters in this country should meet competition on even terms

CLEARLY the day of integrated mass trade effort, as a counterpart of mass production, is at hand, according to Dr. Julius Klein, director of the Bureau of Foreign and Domestic Commerce, in his address before the sixteenth annual meeting of the Chamber of Commerce of the United States, a report which is published elsewhere in this issue. The situation calls for sober factual analysis, calm planning, and courageous action; there is no room for emotional patrioteering on the one hand or supine defeatist submission on the other.

It was hoped that in the Webb-Pomerene combines had been found the answer to foreign collaborative competition, but the last decade of the operation of that act has revealed some unexpected obstacles to its complete success. Although some 57 export associations are now registered under it, only a small proportion of these are actively operating. Their total export trade in the last fiscal year was about \$200,000,000, a third of which was supplied by metals and minerals, another third by forest and food products, and the remainder by miscellaneous manufactures and partly processed goods. The bulk of the commodities, the traders in which avail themselves of the privileges of the act, were raw materials. They seemed to fit more easily into the scheme through the convenience of establishing uniform standardized documents, accounting methods, inspection and grading, allocation of cost quotas, and prorating of good will and other intangible assets.

Germany has led in the movement of consolidated international trade effort for two reasons: (1) more than 2,000 cartels and similar market and production agreements have thrived on her soil; and (2) she is dependent to an unusual degree on the restoration of unrestricted commerce on the Continent, where 75 per cent of her exports are now marketed, partly because of the loss of her colonies. In Austria some 65 corporations have consolidated in the past two years, several being "vertical" mergers linking the successive independent units of the given industry from raw materials through to finished production, along lines quite similar to those followed in the United States.

The experimental period of these post-war undertakings has scarcely gone far enough to warrant definite deductions as to their actual achievement in cutting costs, and in more effective

marketing operations. There is clearly an inclination in some European quarters to count too much on the economies of mass production—to over-play the "mass mania," which has been evident in so many of our own plants, not always with sound profit-making justification.

As a protection against consolidated selling, there is also much discussion regarding the possibility of consolidated buying. The Newton bill, recently defeated in Congress, proposed such a device, and somewhat similar measures and practices have been in use for years in other countries, notably in such lines as bauxite, vegetable oils, zinc, manganese and iodine. In the case of the American rubber import trade the principle has already been applied with considerable effect. It contributed very materially toward the collapse of the attempted producers' control.

Doleful observations have been made that, by proposing to authorize such temporary import defensive measures, we were simply indulging in the same form of criminality which we were condemning in foreign export circles. Careful comparisons, however, of the two

projects—collaborative buying and selling—reveals them as being of diametrically opposite type and purpose. In the minds of these critics who denounce any defensive spirit on the part of American consumers, apparently the only response which we should make is that of complete passive submission. However vicious and unscrupulous the operations of the given foreign combine might be (and there has been more than one episode of just such rapacity in recent years), we should under no circumstances meet aggression with aggression, so we are told, but rather should we undertake to reason with our assailants, to point out the error of their ways, and to dispel their dark intentions by the force of economic logic! In the presence of the burly realities of the trade rivalries and acquisitive aspirations of today, such amiable academic sophistry is nothing but solemn nonsense. The best defense on the part of the consumers, and the only honorable one, is through co-ordinated action under such proper restraints as are necessary in behalf of the general public interest.

The experience of some 2,000 trade associations in the United States offers abundant reasons for assuming large opportunities in internationalized trade collaborative effort. It is to be hoped, for example, that early headway will be made toward interchange of credit information among foreign traders throughout the world. There is a large field for consumer education on the part of many world trades. The need for collaboration in the furthering of uniform commercial legislation, for the interchange of statistical information along mutually helpful lines, for such valuable propaganda as highway education in behalf of automotive trades—along all of these and a hundred other lines are there abundant needs for combined effort in advancing the standards and possibilities of the world's commerce.

Exhibitograph No. 8

NEWS

UNEMPLOYMENT
POOR BUSINESS
PRESIDENTIAL CAMPAIGN
NERVOUS STOCK MARKET

STILL

after space applications for the A.E.R.A. show had been in the mail less than four weeks, requests had been received from 153 exhibitors for 87,601 square feet of space.

The Convention

is STILL nearly five months off. Notwithstanding all the scare headlines the wide awake, solid, substantial, manufacturer STILL has both feet on the ground and is showing the industry that he is carrying on as he has for years with the National Association, realizing the truth of the old saying

Bread cast upon the waters returns a hundred-fold

Die Chasers Recommendation in Effect

A sufficient number of written acceptances having been received for Simplified Practice Recommendation No. 51, Die Head Chasers (for self-opening and adjustable die heads) recently revised by the industry. The division of simplified practice of the Department of Commerce announces that the project is now in effect, as of April 1, 1928, subject to annual revision or reaffirmation by the industry.

Electric Locomotive Shipments Up

Although only six electric locomotives were shipped in April of this year as compared to 23 shipped in April, 1927, the total domestic shipments for the first four months were 55 as compared to 52 for the same period in 1927, according to the U. S. Department of Commerce. The shipments during the

first three months were all higher this year than last. The unfilled orders totaled 42 on the end of April, 1927, and were 41 the last of the same month this year.

Consumer Production of Gases Foreseen

Large consumers of gases for welding and cutting may be potential gas producers, according to F. P. Wilson, Jr., General Electric Company, and, should economies justify the installation of equipment, consumers should be in a position to judge the relative merits of the apparatus available and determine which process would best suit the requirements with respect to the following factors:

The kinds of welding and cutting gases now used and possible substitutes; the effect of such substitutes on the selection of a process for manufacturing these gases; the economic need of consumer manufacture; the need of endeavoring to establish an economic balance between the gases used and the process selected for their manufacture, and the possibilities of applying these gases in industrial operations in which their use is now limited or in which it is non-existent.

Oxygen can be economically produced from the air by means of air liquefaction and subsequent fractionation, a physical process; or by the electrolysis of water, an electrochemical process. In the former case nitrogen is a by-product in the ratio of four volumes to one volume of oxygen. In the latter case hydrogen is a by-product in the ratio of two volumes to one of oxygen. Another commercial method of producing hydrogen in large quantities is by the liquefaction and fractionation of water gas. This latter process although used in Europe is not in general use in this country.

Acetylene and the electric arc have until recently been supreme in their respective fields of application in welding and cutting. Now, however, the economic supremacy of the former has been seriously challenged in welding as well as in the cutting to an extent which may result in an economic adjustment in the present system of gas manufacture and distribution.

The atomic-hydrogen flame has demonstrated characteristics which indicate its great value in many welding applications, and in many instances molecular hydrogen or city gas can replace acetylene as the fuel gas in cutting. Oxygen, the active agent in metal-cutting operations, will undoubtedly be used for years to come in this application and in constantly increasing quantities.

Because of the annual value of the gases used in many industries today, and the impending economic changes just over the horizon, the need is emphasized for a general knowledge of the relation existing between the process of manufacture and the use of these various gases.

\$60,000 for Dallas Tracks

Three track rebuilding plans to be carried out by the Dallas Railway & Terminal Company, Dallas, Tex., have been tentatively announced by the supervisor of public utilities.

The plans include the removal of street car tracks on Parry Avenue and their rebuilding within the Fair Park, the rebuilding of car tracks on Cole Avenue from Lemmon to Knox Street and paving between them, and the rebuilding of car tracks on Commerce Street between Exposition Avenue and the Houston & Texas Central Railroad. These three projects would cost more than \$60,000.

It was indicated that two other other improvement projects are being considered and will be incorporated in the plan before it is finally adopted.

T-Rails for Galveston

Permission has been granted the Galveston Electric Company, Galveston, Tex., by the city commissioners, to install T-rails instead of girder rails on Market Street from Nineteenth to Sixth Streets. The contract for the paving of the street has already been let and it is likely that the electric company will soon begin work on the installation of the new track and concrete surfacing.

Thirty More Cars for Mexico Tramways

In addition to the twenty single-end cars delivered last October to the Mexico Tramways, Mexico City, the J. G. Brill Company, Philadelphia, Pa., has just delivered to the same company, 30 double-end cars.

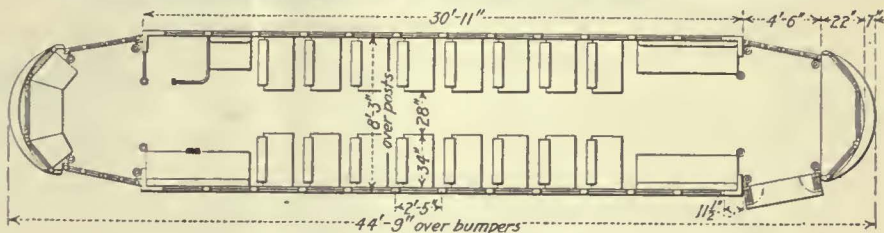
These cars are 44 ft. 7 in. long, 8 ft. 5 in. wide and weigh 33,500 lb. They

are of the two-man type and seat 50 passengers. The trucks have a wheelbase of 4 ft. 10 in., weigh 5,212 lb. each, and are equipped with outside-hung motors.

The finish is in Durban red enamel. The interior is trimmed in aluminum. An interesting feature is the use of ventilators over the vestibule windows.



One of the double-end cars just delivered to the Mexico Tramways



Floor plan of the Brill cars for Mexico Tramways

Name of railway	Mexico Tramways, Mexico City, Mexico	Couplers	Self-supporting radia
Number of units	30	Curtain fixtures	Curtain Supply Company
Type of unit	Two-man, motor, passenger, city double end, double truck	Curtain material	Pantasote
Number of seats	50	Destination signs	Hunter
Builder of car body	The J. G. Brill Company, Philadelphia, Pa.	Door mechanism	National Pneumatic
Date of order	12/14/27	Fare boxes	Cox
Date of delivery	10 cars, 3/22; 10 cars, 3/31; 10 cars, 4/13	Finish	Enamel, Sherwin-Williams Old Dutch railway
Weights:		Gears and pinions	Grade M
Car body	15,585 lb.	Glass	D.T.A.
Trucks	10,425 lb.	Hand brakes	Peacock Staffless
Equipment	7,490 lb.	Headlights	Crouse Hinds
Total	33,500 lb.	Headlining	Agasote
Bolster centers	19 ft. 11 in.	Interior trim	Aluminum
Length over all	44 ft. 7 in.	Journal bearings	Plain
Length over body posts	30 ft. 11 in.	Journal boxes	Brill, semi-steel
Truck wheelbase	4 ft. 10 in.	Lamp fixtures	Brill-G. E.
Width over all	8 ft. 5 in.	Motors	G.E.-275B, outside-hung
Height, rail to trolley base	10 ft. 6 1/2 in.	Painting scheme	Durban red
Window post spacing	29 in.	Roof material	Poplar covered with canvas
Body	Semi-steel	Safety car devices	Safety Car Company
Roof	Arch	Sash fixtures	National Lock Washer
Doors	End, folding	Seats	Brill No. 103
Air brakes	General Electric	Seat spacing	30 1/2 in.
Armature bearings	Plain	Seating material	Birch slats
Axles	A.S.T.M.-A-2-27	Slack adjusters	American Brake Company E-1
Car signal system	Faraday	Steps	Folding
Compressors	CP 27-B	Step treads	Kaes
Conduit	Metal	Trolley catchers	Earl
Control	K	Trolley base	U. S. No. 13
		Trucks	Brill 76-E-1
		Ventilators	Brill exhaust
		Wheels, type	Roller steel, diameter 26 in.
		Wheelguards	Root life guard

Four Cars for Lackawanna & Wyoming Valley

Four cars were ordered by the Lackawanna & Wyoming Valley Railroad, Scanton, Pa., from the Osgood Bradley Car Company on April 18, as mentioned in the April 21 issue of the JOURNAL. The cars are to be of the two-man interurban type. Each car is to be 63 ft. 2 in. long, 9 ft. 3 in. wide. The weight will be 81,000 lb., and there will be seats for 76 passengers. The cars are to be equipped for both 600-volt third rail and overhead trolley operation. Complete specifications are given in the following table:

Name of railway	Lackawanna & Wyoming Valley Railroad, Scanton, Pa.
Number of units	4
Type of unit	Two-man, motor, passenger, interurban, double-end, double-truck
Number of seats	76
Builder of car body	Osgood Bradley Car Co., Worcester, Mass.
Date of order	April 18, 1928
Date of delivery	July, 1928
Weights:	
Car body	39,000 lb.
Trucks	25,000 lb.
Equipment	17,000 lb.
Total	81,000 lb.
Bolster centers	40 ft. 7 in.
Length over all	63 ft. 2 in.
Length over body posts	52 ft. 5 in.
Truck wheelbase	7 ft. 0 in.
Width over all	9 ft. 3 in.
Height, rail to trolley base	13 ft. 2 in.
Window post spacing	32 in.
Body	Semi-steel
Roof	Monitor
Doors	End, sliding
Air brakes	Westinghouse Air Brake Co., Automatic
Armature bearings	Plain
Car signal system	Westinghouse Air Brake Co.
Compressors	DH-25
Conduit	Flexible and metal
Control	Westinghouse AB
Couplers	Tomlinson
Curtain fixtures	Curtain Supply Co., ring type
Curtain material	Double faced pantasote
Door mechanism	Hand
Finish	Paint
Floor covering	Battleship linoleum
Glass	Plate
Hand brakes	Horizontal ratchet type
Heat insulating material	3-ply salamander
Heaters	Consol. Car Heating Co., R1501, A 500 watt
Headlining	3-in. Agasote
Interior trim	Mahogany
Journal bearings	Plain
Lamp fixtures	Electric Service Supplies Co.
Motors	Two, Westinghouse 557-D8, outside hung
Painting scheme	Maroon
Registers	Ohmer
Roof material	Steel frame, wood and duck
Sash fixtures	O. M. Edwards
Seats	Hale & Kilburn, Spec. 392 EE
Seat spacing	32 in.
Seating material	Chase plush (leather in some)
Steps	Stationary, steel
Step treads	Anti-slip
Trolley retrievers	Earl 5A
Trolley base	No. 3 Sterling
Trucks	Baldwin 84-35 AT & AA
Ventilators	Osgood Bradley duplex auto
Wheel diameter	33 in.

Electrical Glossary Published

For guidance in properly listing and classifying electrical apparatus and supplies in shippers' export declarations the Bureau of Foreign and Domestic Commerce, Washington, D. C., has compiled a glossary of electrical terms and instructions to exporters. Each item is listed alphabetically giving opposite each the class number and unit of quantity. A second listing contains the items listed by numbers. The foreword consists of articles of customs regulations for the guidance of exporters.

METAL, COAL AND MATERIAL PRICES F. O. B. REFINERY

	May 8, 1928
Metals—New York	
Copper, electrolytic, cents per lb.	14.0125
Copper wire, cents per lb.	16.00
Lead, cents per lb.	6.10
Zinc, cents per lb.	6.3125
Tin, Straits, cents per lb.	51.375
Bituminous Coal, f.o.b. Mines	
Smokeless mine run, f.o.b. vessel, Hampton Roads, gross tons	4.20
Somerset mine run, f.o.b. mines, net tons	1.875
Pittsburgh mine run, Pittsburgh, net tons	1.95
Franklin, Ill., screenings, Chicago, net tons	1.875
Central, Ill., screenings, Chicago, net tons	1.675
Kansas screenings, Kansas City, net tons	2.50
Materials	
Rubber-covered wire, N. Y., No. 14, per 1,000 ft.	5.40
Weatherproof wire base, N.Y., cents per lb.	16.50
Cement, Chicago net prices, without bags	2.05
Linseed oil (5-bbl. lots) N. Y., cents per lb.	10.60
White lead in oil (100-lb. keg), N. Y., cents per lb.	13.25
Turpentine (bbl. lots), N. Y., per gal.	\$0.5875

ROLLING STOCK

MONTREAL TRAMWAYS, Montreal, Canada, plans the purchase during 1928 of 58 buses of the 37-passenger, 15,000-lb., 90-hp. type. The bodies are to be constructed of duralumin and steel.

SAN ANTONIO PUBLIC SERVICE COMPANY, San Antonio, Tex., has purchased one 21-passenger, street car type, bus from the Studebaker Corporation, South Bend, Ind.

BOSTON ELEVATED RAILWAY, Boston, Mass., will purchase 28 gas-electric buses. Ten will be manufactured by the Twin Coach Corporation, Kent, Ohio, eleven by the American Car & Foundry Motors Company, New York, and seven by the Versare Corporation, Albany, N. Y. All buses will be equipped by the General Electric Company.

TRACK AND LINE

SPRINGFIELD STREET RAILWAY, Springfield, Mass., is planning to renew ties at various points on Carew Street.

LOUISVILLE RAILWAY, Louisville, Ky., is doing considerable track raising on Fourth Avenue at the present time, having raised the crossing at Fourth and Jefferson Street during the past week. The street has dropped as much as 6 in. in some places between Broadway and Main Street, as a result of the driving of a large sewer tunnel.

TRADE NOTES

BLACK & DECKER MANUFACTURING COMPANY, Towson, Md., has recently made the following changes in their sales organization: H. L. Balke is with the Kansas City branch, covering the territory around Omaha, formerly covered by Mr. S. D. Shawgo; G. F. Parr is with the Buffalo office, and has taken over the territory of J. H. Hutton; G. N. McCarthy has filled the vacancy at the Buffalo office, made by H. B. Austin, who has been transferred to Chicago; J. A. Murray is working in Baltimore, taking over the accounts formerly

sold by Curtiss Watts; H. B. Hazerodt has resigned as manager of the Detroit branch and J. H. Walker, who has been a salesman in that territory, has been appointed manager. The new Detroit branch office is located at 11501 Woodward Avenue.

ROME WIRE COMPANY, Rome, N. Y., has appointed L. A. Zima district engineer in the New York office. Mr. Zima was formerly cable engineer in charge of design and specification of cables for power stations substations, and transmission and distribution systems of the Brooklyn Edison Company.

GENERAL ELECTRIC COMPANY, Schenectady, N. Y., has appointed C. W. Stone, formerly manager of the central station department, to the position of consulting engineer, and has selected M. O. Troy as manager of the central station department.

IDEAL COMMUTATOR DRESSER COMPANY, Sycamore, Ill., has appointed Superior Supply Company, Bluefield, W. Va., as sales representative for the sale of ideal commutator resurfacers and other maintenance equipment in the Bluefield territory.

ROLLWAY BEARING COMPANY, Syracuse, N. Y., announces the appointment of Alfred E. Munch, Jr., as representative in the Chicago-Milwaukee district, with headquarters at 544 Railway Exchange Building, Chicago.

ADVERTISING LITERATURE

INGERSOLL-RAND COMPANY, 11 Broadway, New York, has just completed the sixth edition of its 140-page, two-color book, entitled, "100 and 1 Ways to Save Money with Portable Compressors." In this book the company has embodied comparative cost data on its portable air compressors and air-operated tools. The information has been put together in handy reference, cross index form. In most cases, figures are presented on a man-hour basis so that they can be readily applied to local conditions in any part of the world. Free copies may be obtained by writing to the company in New York or at any of its local branches.

MARTINDALE ELECTRIC COMPANY, Cleveland, Ohio, announces a new No. 10, 36-page catalog on motor maintenance equipment.

JOHN C. DOLPH COMPANY, Newark, N. J., has published a solvent and calculating chart for insulating varnish. It enables the user to determine the correct amount of solvent needed to bring the varnish to the required gravity for dipping. It also includes directions to determine the number of gallons of varnish contained in removable head drums.

AMERICAN CAR & FOUNDRY MOTORS COMPANY, New York, has published two booklets descriptive of A.C.F. parlor coaches and A.C.F. de luxe urban coaches.



A service requirement— Maximum platform space!

In considering specifications for those new cars, give just consideration to the question of platform space. Consider only the equipment that will occupy a minimum of such valuable space.

Their requirement of very little platform space is but one of the many advantages which have made "Peacock" Staffless Brakes standard equipment on nearly all modern cars.

Three times the braking power of ordinary hand-brakes, almost unlimited chain-winding capacity, easy operation, low installation and maintenance costs, and their unfailing reliability are other factors which have led to their popular adoption.

Why not get the complete "Peacock" Story which discloses in detail the reasons why nearly all modern cars are using them?



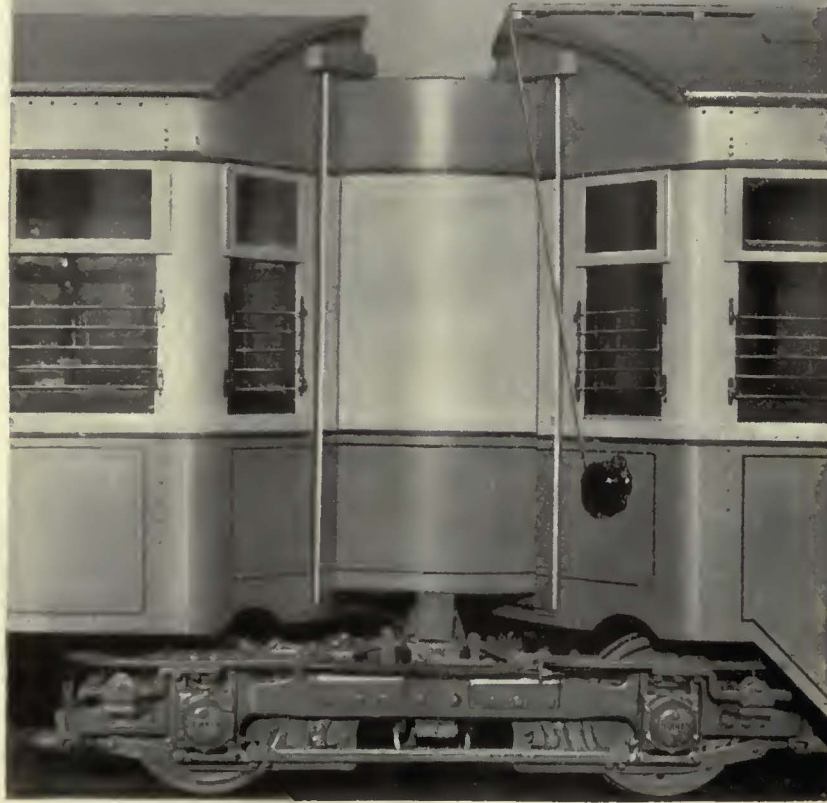
The
Peacock
Staffless

National Brake Company, Inc.

890 Ellicott Square

Buffalo, N. Y.

Canadian Representative: Lyman Tube & Supply Co., Ltd., Montreal, Can.



75

Timken-Equipped Cars for Cleveland Railways

CREATED for high efficiency, the Duplex Articulated street car is made still more efficient by Timken Bearings. Timken-equipped journals have been specified by the Cleveland Railway Co. for 25 of these cars and for 50 single cars. All of these cars are Timken-equipped Kuhlman-Brill cars—the largest order ever placed for roller bearing street cars!

They assure much smoother travel and far-reaching economy. The fast, jerkless starting signifies reduced frictional resistance which saves lubricant, power, motors, and wear and tear.

Extreme endurance, due to Timken full thrust capacity, and greater load carrying area, eliminates most journal maintenance.

High wear-resistance and low rolling resistance are combined in Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken-made electric steel. That is the reason for Timken eminence in every type of rail transportation.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN

Tapered

ROLLER BEARINGS



The Passenger's Comfort *isn't all in the seat* , , ,

A LOT of it's "below the axles"

—the physical comfort of easy-flexing, smooth-rolling Goodrich Heavy Duty Silvertowns

—plus the mental comfort of a safe, sure, road-biting grip where the tread meets the road.

Back of it all is a carcass with extra

strength—extra toughness. Extra rubber between the outer plies anchors the tread and cords together. Water Cured rubber—cured so accurately that these tires are tough clear through.

Comfort — safety — economy — longer mileage and better performance for each mile in the total—these factors are winning and keeping a place for Goodrich Heavy Duty Silvertowns—on some of the biggest fleets on the road.

THE B. F. GOODRICH RUBBER COMPANY *Est. 1870*
Akron, Ohio Pacific-Goodrich Rubber Co., Los Angeles, Calif.
In Canada: Canadian-Goodrich Rubber Company, Kitchener, Ont.

Goodrich

HEAVY DUTY

Silvertowns

HIGH PRESSURE OR BALLOON

The Electric Railway Industry writes
its own recommendation

For **YELLOW**

*Again in 1927 as in
1925 and 1926 more
Yellow Coaches were
purchased by Electric
Railways than any
other make.*

*And a greater
percentage of Electric
Railways bought
Yellow
Coaches*



COACHES



General Motors Truck Company
Pontiac, Michigan



Part of the layout floor in the Bethlehem Frog and Switch Plant at Steelton, Pa.

Why Bethlehem Track Layouts Assemble in the Field *Without a Hitch*

Because every Bethlehem Special Track Layout is carefully fitted together *under cover* by skilled workmen, in heated and well-lighted shops, where the ideal working conditions promote care and accuracy. This assures freedom from trouble due to improperly fitted parts, when putting together in the field. Assembly without a hitch!

Below is a partial list of Bethlehem Products for Electric Railways:

Rolled Alloy Steel Crossings
Machine Fitted Joints
Rolled Steel Wheels Bolts
Hard Center Frogs Tie Plates
Abbot Base Plates
Forged Axles Splice Bars
Hard Center Mates Tie Rods
Pole Line Material
Tee and Girder Rails
Center Rib Base Plates

BETHLEHEM STEEL COMPANY, *General Offices:* BETHLEHEM, PA.

DISTRICT OFFICES:

New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo
Cleveland Detroit Cincinnati Chicago St. Louis San Francisco Los Angeles Seattle Portland

Bethlehem Steel Export Corporation, 25 Broadway, New York City, Sole Exporters of Our Commercial Products.

BETHLEHEM

102 YEARS OF MANUFACTURING EXPERIENCE

Rattan car seat webbing may be ordered through any H-W sales office



No. 55 P-X

BRINGS PULLMAN COMFORT TO THE INTERURBAN CAR!

THIS beautiful de luxe seat, mounted on our new revolving base, brings to the interurban car all the comfort and convenience of the finest parlor car chair. Deep, spring-filled seat cushions and backs, make this the most luxurious and comfortable car seat made today.

The seat revolves easily by pressing the foot pedal which is handily located on the steel base. The revolving mechanism has been purposely made as simple and as strong as possible so that there is nothing to get out of order. If you are interested in making your interurban cars the finest and most comfortable type in use today, by all means give the 55 P-X, as shown, your serious consideration. The base illustrated will also accommodate other car seats which we make.

If you have not received a copy of our new Bus Seat Catalogue, write for it.



Heywood-Wakefield
REG. U.S. PAT. OFF.

Heywood-Wakefield Company, Wakefield, Mass.; 516 West 34th St., New York, N. Y.; 439 Railway Exchange Bldg., Chicago, Ill. H. G. Cook, Hobart Bldg., San Francisco, Cal. The G. F. Cotter Supply Company, Houston, Texas. John R. Hayward, Liberty Trust Building, Roanoke, Va. The Railway & Power Engineering Corp., 133 Eastern Ave., Toronto; Montreal; Winnipeg, Canada.



*"We never have
any trouble in
the way of
CHASSIS and
UNIVERSAL
lubrication"*

← This is what
Yellowway, Inc.
"The Longest Bus Line in the world,"
says about

TEXACO MARFAK GREASE

The buses of this company operate under the hardest kind of service.

Each bus weighs 11,800 pounds empty.

Each hauls from twenty-five to thirty passengers.

The motors are rated from 55 hp. to 103 hp.

If your own buses are subjected to hard service (where is the bus that isn't?)—if you "never want to have any trouble in the way of Chassis and Universal Lubrication" try **TEXACO MARFAK GREASE**. This grease is way ahead of any other universal joint lubricant on the market.

It is soft, pliable and plastic and has decided non-fluid tendencies. It is noted for its ability to "train" or adhere to itself and to the wearing surfaces. (In much the same way that bread dough adheres yet strings out).

TEXACO Marfak Grease resists heat and centrifugal force. It will not break up under the roughest kind of treatment.

Best of all, TEXACO Marfak Grease is an all-purpose grease. Use it on Universal Joints, wheel bearings, brake connections—any place in fact, where there is provision for pressure lubrication.

It's economical, too, and lasts a long time.

We shall be glad to demonstrate **TEXACO MARFAK GREASE** on any of your buses, any time. Try it.

THE TEXAS COMPANY

Texaco Petroleum Products

Dept. E5, 17 Battery Place, New York City

OFFICES IN PRINCIPAL CITIES





One way to hold the business your driver *builds*

*Don't let
POOR LIGHTS
tear down the business
his courtesy and skill
are building up.*

A COURTEOUS driver, keen and alert, can do much to build business. Good lights, well placed, giving reading comfort to the coach passengers, are a material aid in holding this business. On the other hand, business suffers if lights grow dim.

No ordinary power plant can keep lights at their brightest in the motor coach. Long hours of operation, heavy lamp load, gruelling day-in-

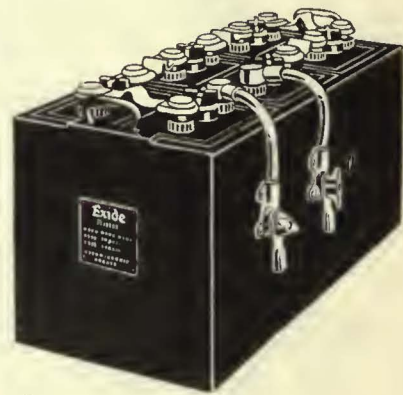
and-day-out service—call for extra power—extra stamina. Only a generator of the right capacity, in combination with a dependable battery of the proper size, can handle the job satisfactorily.

Well-paying coaches

That is why owners of well-paying coaches use the Exide Motor Coach Battery. It is specially designed for this battery job, by engineers who know how difficult that job is.

Profit two ways

Besides insuring good lights for drivers and customers, these owners are lighting their coaches at the lowest operating cost per mile. Thus they profit two ways . . . they save money by cutting operating costs—they make money by building and maintaining business.



THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

Exide Batteries of Canada, Limited, Toronto

LB Lang

The Sterling Mark on Bus Bodies



A Lang Body—whether built on a new chassis—whether built on an old chassis—whether our new all metal job:

Produces the same results

The Lang

Bodies

*"After all—
it's the Setting
that counts!"*

PASSENGER Attraction—Passenger
Comfort—Increased Revenue—
Longer Life—Lower Maintenance
Cost.

Answers every problem of the operator.

What More Can You Buy At Any Price



*Body Co., Cleveland
Ohio*



—the Upholstery
that invites and
holds patronage
—saves and serves
as only this regal
Mohair Velvet can



Chase VELMO — Made by Sanford Mills, Sanford, Me.
L. C. Chase & Co., Selling Agents, Boston
New York - Atlantic City - Detroit - San Francisco - Chicago

The Upper Ray

The Lower Ray



**THE BETTER YOU SEE
THE SAFER YOU GO.**

Driving at night, whether it's out on the open road or thru crowded city streets, the better you see, the safer you go.

Thus is it explained why Guide Tilt Ray Headlamps have come into such popular favor with makers and operators of automobiles, trucks, and motor-coaches.

Guide Tilt Rays furnish the kind and volume of light necessary for all conditions—the upper ray for faster open road driving, the lower ray for city driving and passing—always under control without removing the hands from the steering wheel.

If you would make your night operations safer, equip with Tilt Rays. Catalog on request. Address Fleet Sales Department, The Guide Motor Lamp Manufacturing Company, Cleveland, Ohio.

Guide
TILT RAY
HEAD LAMPS

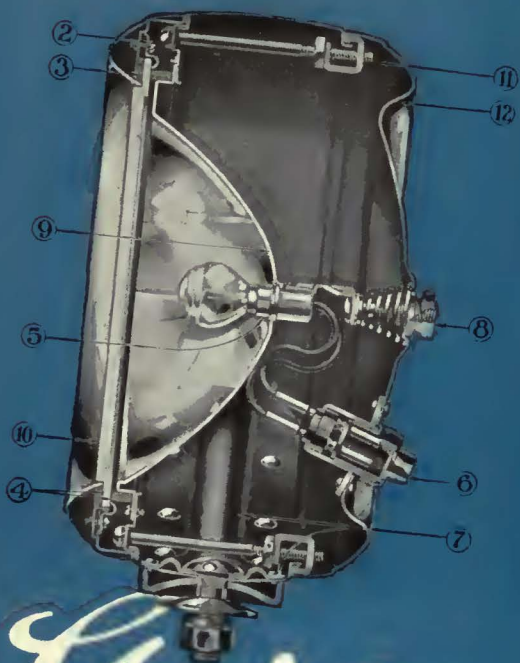
A DOZEN REASONS

WHY TILT RAYS STAND THE STRAIN OF HEAVY DUTY SERVICE



A—Thumb screw catch that makes the opening of lamp door easy, simple and positively locks door securely.

B—Hinge for door of lamp.



- 1 An upper and lower ray.
- 2 Door stiffener on inside for reinforcing purposes with glass ring that positively holds glass in place at all times. No danger of glass dropping out when the door is opened.
- 3 Felt seals for air-tight waterproof condition.
- 4 Reflector is locked to the body—sealed between body and glass ring by additional cork seal.
- 5 Bulb firmly held in place—no distortion or wobbling. A special designed bulb socket.
- 6 Special bus connectors, proven correct by actual performance.
- 7 Bracket and body properly reinforced by heavy inside steel stiffener.
- 8 Outside ratchet adjustment for focusing bulbs.
- 9 Special reflector with four distinct sections, scientifically designed to contribute its share to an optically correct vertical distribution of light controlling upper and lower beam. Labelled with the word "Top" at the upper part to prevent incorrect installation.
- 10 Lens divided into three sections to properly distribute light where needed. A notch in the edge of lens into which a lug fits is provided to prevent the lens from rotating. Also labelled "Top" in its proper place as a guide for installation.
- 11 Four bolts for reinforcement and locking purposes.
- 12 Lamp constructed of extra heavy material. Trouble-proof.

Guide

TILT RAY
HEAD LAMPS



Methods may differ— *but Principles survive*

It is significant, to those responsible for transportation *profits*,

- that practically all the successful pioneers in electric traction have continuously used Ohmer fare registers for more than twenty-five years;
- that more than 150 electric railway lines have used Ohmer equipment for over ten years;
- that over ninety per cent of the interurban systems in the United States are OHMER-ized.

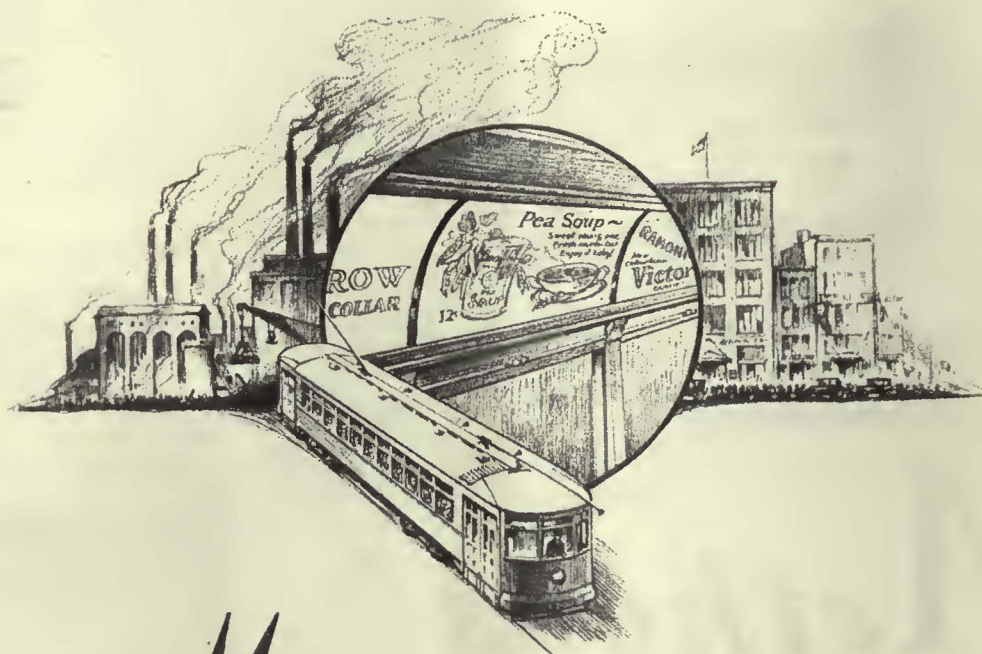
Wherein lies the significance? On three counts, chiefly:

- First*, The same basic principles originally championed and applied by John F. Ohmer have stood the test of time unchallenged.
- Second*, Every Ohmer register is built to deliver long and faithful service, supported by a nation-wide service organization of marked efficiency.
- Third*, By constant refinement of product and broadening of service, Ohmer has consistently anticipated the growing demands of passenger transportation.

Products ever finer and better, utility ever more complete and more adaptable,—constant improvement in scope and form, but constant adherence to the same basic principles—thus has Ohmer kept faith with the Industry it serves.

And therein lies *your* assurance of continued profits from Ohmer service.

OHMER
REG. U. S. PAT. OFF.
FARE REGISTER CO.
Dayton, Ohio



Mutual Service

TO the manufacturers and distributors of America and the street railway systems that transport the millions of America's potential buyers, Collier offers a mutual service.

This service has brought the street railway riders in thousands of cities and towns throughout the country to look upon car cards as extremely useful and pleasing features of up-to-date street car service. It has given national and local advertisers a medium thru which they can get their messages to selected territories easily, economically and convincingly.

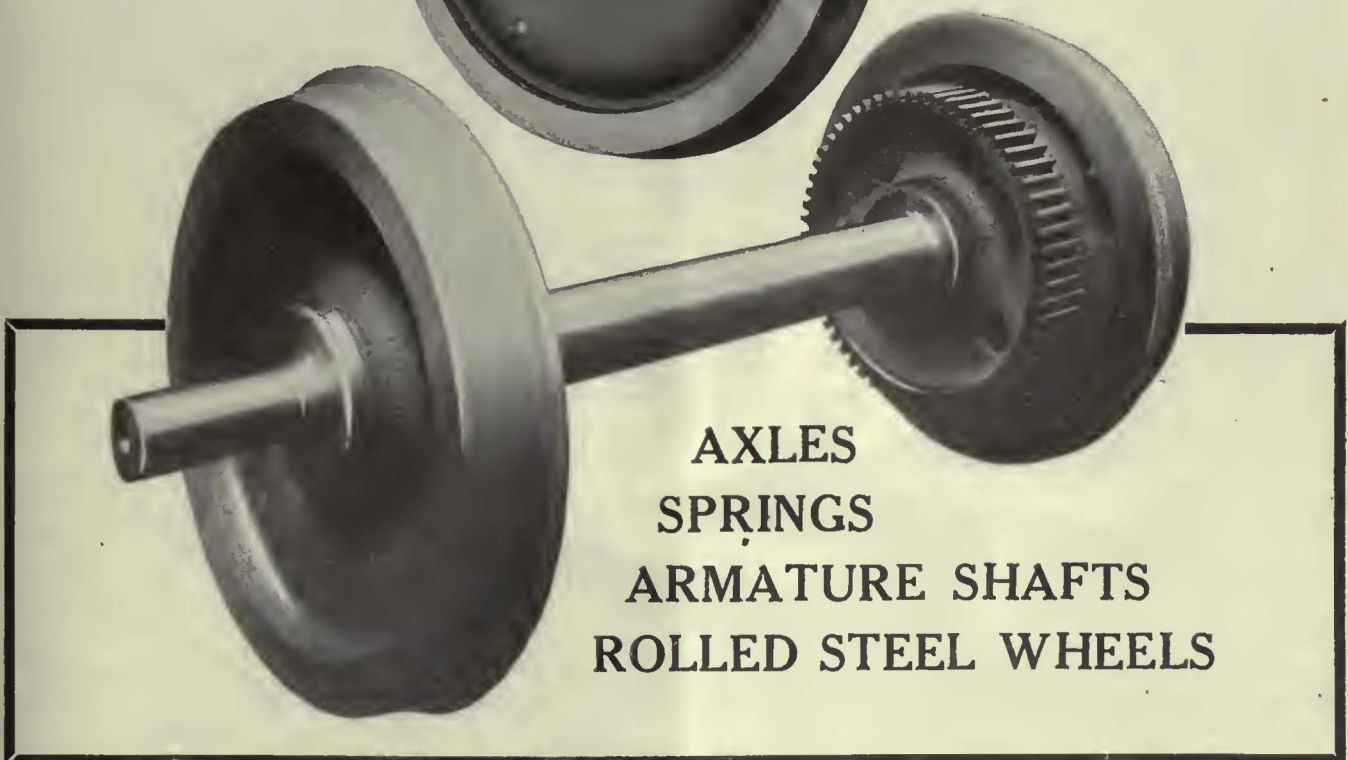
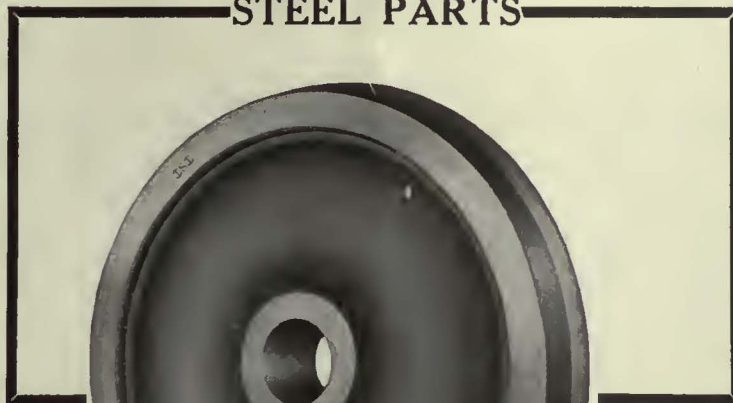
Our business is one of service—service to the street railway industry, service to America's national and local advertisers, service to the millions of people who daily ride on street cars.



CANDLER BUILDING,
NEW YORK, N. Y.

MAINTENANCE RECORDS PROVE
 THE RELIABILITY AND ECONOMY OF
“STANDARD”

STEEL PARTS



AXLES
 SPRINGS
 ARMATURE SHAFTS
 ROLLED STEEL WHEELS

STANDARD STEEL WORKS COMPANY

PHILADELPHIA, PA.

BRANCH OFFICES:

CHICAGO
ST. LOUIS

NEW YORK
HOUSTON

PORTLAND
RICHMOND

SAN FRANCISCO
ST. PAUL

PITTSBURGH
MEXICO CITY

WORKS: BURNHAM, PA.

1 ton or 1000

RAILS

L·B·FOSTER COMPANY
PITTSBURGH · NEW-YORK · CHICAGO

The advertisement features a large, three-dimensional sign spelling 'RAILS' in the center, set against a dark background. Above the sign, the text '1 ton or 1000' is written in a curved path. Below the sign, a detailed illustration of a factory or industrial plant is shown, with smoke rising from various points. The factory buildings are labeled 'L.B. FOSTER CO.' and 'PITTSBURGH'. The overall scene is rendered in a high-contrast, black and white style.



Looking west on Washington Street at the intersection of Cincinnati Street. Note the excellent condition of the tangentials and the smooth surface of the track area. Carey Elastite Track Insulation was used throughout.

“...a test installation in 1924...
 now standard in all
 track construction”

“IN 1924, we made a test of asphaltic rail filler, installing it on each side of the rails,” said R. E. Standish, Superintendent Maintenance, Peoples Railway, Dayton, Ohio.

“In this way, we became thoroughly sold on this type of track insulation, and it is now included as standard in all our track construction work.

“We use Dayton-Mechanical ties, 100-lb. ARA-A rails, thermit-welded joints, Carey Elastite System of

Track Insulation, brick paving and asphalt filler.”

The Carey Elastite System of Track Insulation, referred to by Mr. Standish, is a preformed asphaltic compound reenforced with asphalt-saturated fibres. It is impervious to moisture, and forms a lastingly shock-absorbing cushion between the rails and paving.

Write for full particulars. If you are planning any track construction work, our representative will be glad to call and tell you all about this efficient material. Write.



The Philip Carey Company
 Lockland, Cincinnati, Ohio

SYSTEM OF TRACK INSULATION



He is your business partner

He considers first and foremost your interests.

He is truthful and honest in his dealings with you.

He is not provincial, but his experience is nation-wide in scope.

He is not opinionated, but brings to you unbiased facts, news, and reports.

He has a finger on the pulse of your trade's activities. He promulgates helpful information.

He is in close touch with manufacturers, producers, distributors—those from whom you buy.

He deals with none which has a tendency to mislead or which does not conform to business integrity.

He is a consultant that "sits in" with you regularly. His suggestions are profitable to you.

He holds a fellowship in a select association with exacting standards of membership.

He has pledged himself to determine the highest and largest function of the trade which he serves, and to strive in every legitimate way to promote that function.

HE IS THIS PAPER.

Your paper. A member of the Associated Business Papers, Inc.

THE ASSOCIATED BUSINESS PAPERS, Inc.

Executive Offices: 220 West 42nd St., New York, N.Y.

A. B. P.

The A.B.P. comprises a group of business papers that reaches 54 fields of trade and industry. Membership requires the highest standards in every department of publishing, circulation, editorial, and advertising.

The advertisers in this publication demonstrate by their presence here that they are awake to modern methods of selling as well as production—methods that cut costs and standardize operations.

Clean the Oakite way —and forget about scrubbing!

NO NEED to spend valuable hours scraping and scrubbing repair parts to remove the grease, dirt and muck—not when you clean the Oakite way.

Your shopman merely lowers dirty parts and assemblies into the Oakite tank—and forgets all about scrubbing. The solution *soaks* them clean while he is busy with actual repair work. It saves *you* money by saving your mechanics' time.

Write us for details about this better way to handle all your shop cleaning jobs. Ask for "Oakite in Railroad and Car Shops." Sent on request.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the U. S. and Canada

Manufactured only by
OAKITE PRODUCTS, INC., 28B Thames St., NEW YORK, N. Y.

OAKITE

TRADE MARK REG. U. S. PAT. OFF.
Industrial Cleaning Materials and Methods

Creosoted ties cut costs to the first cost



Under the pavement, deep into dank, musty earth . . . where untreated wood could not resist the ravages of decay-producing fungi and the destructive termite (white ant) . . . where replacements involve great cost, interruption of service, interference with street traffic, the far-sighted operating officials of the South Carolina Power Company placed these Prettyman *creosoted* ties with confidence and assurance.

Creosoted



Railroad Cross-ties; Switch Ties; Bridge Timbers; Construction Timbers; Mine Timbers; Lumber Piling; Poles; Posts and other Forest Products

J.F. Prettyman & Sons

Wood Preserving Plant
Charleston, S. C.



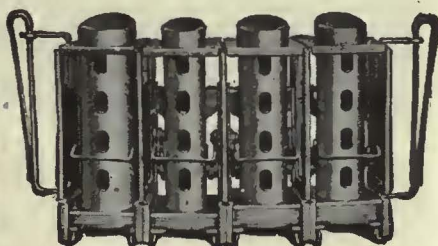
JOHNSON FARE COLLECTING SYSTEMS



Johnson Electric Fare Boxes and overhead registers make possible the instantaneous registering and counting of every fare. Revenues are increased 1½ to 5% and the efficiency of one-man operation is materially increased. Over 4000 already in use.

When more than two coins are used as fare, the Type D Johnson Fare Box is the best manually operated registration system. Over 50,000 in use.

Johnson Change-Makers are designed to function with odd fare and metal tickets selling at fractional rates. It is possible to use each barrel separately or in groups to meet local conditions. Each barrel can be adjusted to eject from one to five coins or one to six tickets.



Johnson Fare Box Co.

4619 Ravenswood Ave., Chicago, Ill.

Bankers and Engineers

Ford, Bacon & Davis Incorporated Engineers

115 Broadway, New York
PHILADELPHIA CHICAGO SAN FRANCISCO

The J. G. White Engineering Corporation

Engineers—Constructors

Oil Refineries and Pipe Lines, Steam and Water Power Plants, Transmission Systems, Hotels, Apartments, Office and Industrial Buildings, Railroads.

43 Exchange Place

New York

STONE & WEBSTER

Incorporated

Design and Construction
Examinations Reports Appraisals
Industrial and Public Service Properties

NEW YORK BOSTON CHICAGO

THE BEELER ORGANIZATION

Transportation, Traffic, Operating Surveys
Better Service—Financial Reports
Appraisals—Management

52 Vanderbilt Ave.

New York

SANDERSON & PORTER ENGINEERS

PUBLIC UTILITIES & INDUSTRIALS

Design Examinations Construction Reports Valuations Management

CHICAGO NEW YORK SAN FRANCISCO

ENGELHARDT W. HOLST

Consulting Engineers

Appraisals Reports Rates Service Investigation
Studies on Financial and Physical Rehabilitation
Reorganization Operation Management

683 Atlantic Ave., BOSTON, MASS.

ALBERT S. RICHEY ELECTRIC RAILWAY ENGINEER

WORCESTER, MASSACHUSETTS

REPORTS - APPRAISALS - RATES - OPERATION - SERVICE

BYLLESBY ENGINEERING AND MANAGEMENT CORPORATION

231 S. La Salle Street, Chicago

New York

Pittsburgh

San Francisco

O. B. BUCHANAN W. H. PRICE, JR. JOHN F. LAYNG President Sec'y-Treas. Vice-President BUCHANAN & LAYNG CORPORATION

Engineering and Management, Construction
Financial Reports, Traffic Surveys
and Equipment Maintenance

BALTIMORE
1004 Citizens National
Bank Bldg.

Phone:
Hanover: 2142

NEW YORK
49 Wall Street

DAY & ZIMMERMANN, INC. ENGINEERS

DESIGN - CONSTRUCTION - REPORTS
VALUATIONS - MANAGEMENT

NEW YORK

PHILADELPHIA

CHICAGO

HEMPHILL & WELLS

CONSULTING ENGINEERS

Gardner F. Wells Albert W. Hemphill

APPRAISALS

INVESTIGATIONS COVERING

Reorganization Management Operation Construction

43 Cedar Street, New York City

WALTER JACKSON

Consultant on Fares and Motor Buses

The Weekly and Sunday Pass—Differential
Fares—Ride Selling

Holbrook Hall 5-W-3

160 Gramatan Ave., Mt. Vernon, N. Y.

KELKER, DELEUW & CO.

CONSULTING ENGINEERS

REPORTS ON

Operating Problems Valuations Traffic Surveys

111 W. Washington Street, Chicago, Ill.

McCLELLAN & JUNKERSFELD

Incorporated

ENGINEERING AND CONSTRUCTION

Examinations—Reports—Valuations
Transportation Problems—Power Developments

68 Trinity Place, New York

Chicago

St. Louis

E. H. FAILE & CO.

Designers of

Garages—Service Buildings—Terminals

441 LEXINGTON AVE.

NEW YORK

THE P. EDWARD WISH SERVICE

50 Church St.
NEW YORK

Street Railway Inspection
DETECTIVES

131 State St.
BOSTON

When writing the advertiser for information or prices, a mention of the Electric Railway Journal would be appreciated.

THE BABCOCK & WILCOX COMPANY

85 LIBERTY STREET, NEW YORK

**Builders since 1868 of
Water Tube Boilers
of continuing reliability**

BRANCH OFFICES

ATLANTA, Candler Building
BOSTON, 80 Federal Street
CHICAGO, Marquette Building
CINCINNATI, Traction Building
CLEVELAND, Guardian Building
DALLAS, TEXAS, Magnolia Building
DENVER, 444 Seventeenth Street
DETROIT, Ford Building
HOUSTON, TEXAS, Electric Building
LOS ANGELES, Central Building
NEW ORLEANS, 344 Camp Street



WORKS
Bayonne, N. J.
Barberton, Ohio

**Makers of Steam Superheaters
since 1898 and of Chain Grate
Stokers since 1893**

BRANCH OFFICES

PHILADELPHIA, Packard Building
PHOENIX, ARIZ., Heard Building
PITTSBURGH, Farmers Deposit Bank Building
PORTLAND, ORE., Falling Building
SALT LAKE CITY, Kearns Building
SAN FRANCISCO, Sheldon Building
SEATTLE, L. C. Smith Building
HONOLULU, T. H., Castle & Cooke Building
HAVANA, CUBA, Calle de Aguilar 104
SAN JUAN, PORTO RICO, Royal Bank Building

The Pioneer

Blazing trails has always been the work of the pioneer. And where he has lead, progress has followed.

Engineering service is a pioneer, blazing new trails of economy and efficiency for the business that employs it.

W. H. Sawyer
PRESIDENT.

STEVENS & WOOD, Incorporated
Engineers and Constructors
120 Broadway, New York
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A Personalized Service



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(Continued on page 50)

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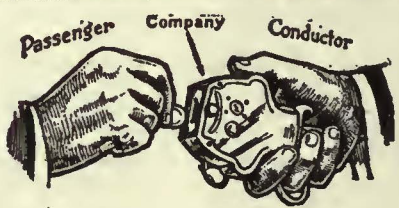
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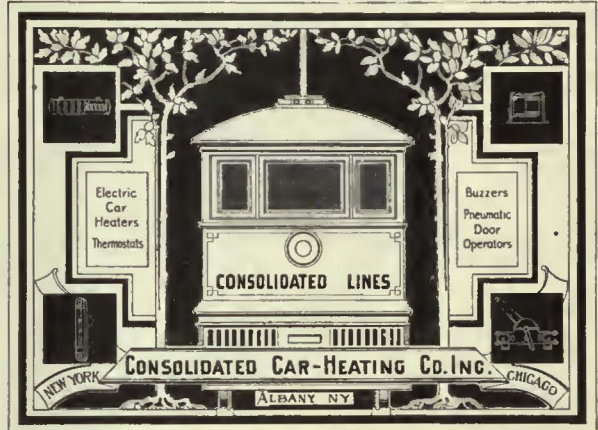
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