Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

HENRY W. BLAKE and HAROLD V. BOZELL, Editors HENRY H. NORRIS, Managing Editor
HARRY L. BROWN, Western Editor N. A. BOWERS, Pacific Coast Editor H. S. KNOWLTON, New England Editor C. W. SQUIER, Associate Editor C. W. STOCKS, Associate Editor
DONALD F. HINE, Editorial Representative A. D. KNOX, Editorial Representative GEORGE BUSHFIELD, Editorial Representative
G. J. MACMURRAY, News Editor

Volume 57 New York, Saturday, April 30, 1921 *Number* 18

Lest We Forget the War Veterans

TWO years ago some four millions of men who had been wearing the khaki of the military service or the blue of the naval arm were in process of being discharged from the duties they had performed so splendidly and they were seeking to re-enter the normal fields of industry. To a very considerable extent, employers endeavored to take care of all returning former employees by reinstating them in their old jobs or supplying better ones. The great industrial activity of 1919 and the early part of 1920 made it comparatively easy for many others to find lucrative employment. Patriotic organizations helped by the exertion of every legitimate means to aid the returned soldiers to find jobs. Now the tide has turned. The industrial depression has resulted in the throwing of thousands of persons out of work, among them many former service men, and there has been increased activity on the part of the various organizations of veterans for bonus legislation and preferential treatment in civil service appointments.

Whether the payment of additional compensation in the form of a bonus to veterans is advisable at this time is debatable, but the street railways and manufacturing companies are in a position to help the situation to some extent by not forgetting to practice a reasonable amount of preference in the employment of veterans wherever it is possible to do so. While forces are not being increased to any extent at present, there is always a certain amount of turn-over, even in the dullest of times. It is worth remembering that these four million or so of young men spent months of anything but ease or comfort at an average wage of a trifle over $30 a month, while those who remained at home were seldom making less than that much per week, and in the great majority of cases far more. Hence it would appear that the ex-service man can well receive preference among two or more prospective employees, other conditions being equal.

Situation in New York City Reviewed

FOR those who wish to have a brief résumé of the New York transit situation, the review by Herman A. Metz, published elsewhere in this issue, should be most welcome. Mr. Metz has had an active part in much of the history which he recounts, having been Comptroller of the city of New York from 1906 to 1910, and he points out clearly that the only way to solve the problem is to take the question out of politics and find out what the present conditions are, and this the new commission is empowered to do.

The result of the active debate on Governor Miller's plan, both before and after the passage of the act, has been greatly to help the citizens of New York to understand the traction problem, and addresses by Mr. Metz and others have aided in this general education. The personnel of the new transit commission gives promise of a thorough study of the situation, coupled with an intelligent solution of it, although it may be expected that the city administration will exert every effort within its power to block the progress of the inquiry by legal means.

The traction situation in New York is admittedly complicated, involving as it does a large number of companies, some being lessors and others lessees, some being solvent and others not, and some being parties to special agreements with the city while others operate under franchises as old as any in the country. Nevertheless, similar problems, differing in complication only in degree, have been successfully solved in other cities in this country, and there is no reason to expect a failure in New York, once the commission gets to work.

A Budget Is Good, but It Need Not Be a Straitjacket

THE necessity for applying the brakes to operating expenses on electric railway properties has brought the budget to the fore as a factor in cost control. On many properties the budget system has been successfully used for a long time. It has helped them to keep going when without it they would not have known where they were headed until too late to change their course. On the other properties the budget plan has been installed recently, but is already bringing good results. There are still, however, many opportunities to inaugurate this plan.

To be successful a budget system must interest the individuals who actually control the spending of money. It is not sufficient for the manager and the comptroller to agree on the amounts that can be allotted to the several departments. Undoubtedly these officials have authority to tighten up on the pursestrings as they see fit, but they cannot inculcate and foster the spirit of real company thrift unless they can secure co-operation on the part of the ultimate spender. This is the factor which insures the success of budget plans like those used by the Boston Elevated Railway, the United Railways & Electric Company of Baltimore, the Cincinnati Traction Company and the Rochester & Syracuse Railroad, discussed in recent issues of this paper respectively by E. M. Flint, C. D. Emmons and W. C. Culkins, and in the present issue by D. E. Crouse.

Granted that the ultimate spender's interest in the budget must be secured, it is up to the management to enlist this interest. He must first be convinced of the necessity for economy and be inspired with a real desire to insure the profitableness of operation of the property. He must have demonstrated to him the reasonableness of the proposed limitations on his spending. And to crown it all he must know practically continuously just how well he is controlling the outgo, and must realize that if he makes good he will receive proper appreciation of his efforts.

At the same time there must be a flexibility to the budget. Circumstances arise which demand frequent readjustment. Shifting of allowances from department to department, with full consent of those concerned, may

be necessary. This can easily be accomplished through co-operation, and only so.

In making the budget interesting, different means must be used. To some men graphic presentation, as used by Mr. Crouse's company, makes the strongest appeal. Others prefer "figures." They should have what they want as to form, just so the facts are made to grip them.

Schedules Committee Report Is to Be a Valuable Study

QUESTIONNAIRES sent out by the committee on economics of schedules of the T. & T. Association give promise of a valuable report on this important subject at the next convention. This committee has divided its work into three sections, the first covering definitions and analyses of car-hours and crew-hours, the second having to do with variable running time and the third with recent methods for improving handling of traffic in congested districts.

The discussion on the first subject at last year's convention developed the need for a standard classification of car-hours as between revenue and non-revenue time. One company was reported as having about 19 per cent of "bonus" time in the car-hours paid for. The burden of this on cost of operation is apparent. Benefits from a clearer understanding of the subject will be twofold. Executives should realize the desirability of regaining some of the costly working conditions which they have conceded to their employees in previous contracts, and it will be possible to get a real comparison between running time on various properties.

The second subject is somewhat allied to the above. It is undoubtedly true that many slipshod methods exist in the making of schedules, and it is hoped that the companies will agree upon more scientific methods for preparing time-tables and making changes promptly to suit traffic demands.

Methods developed in recent years for improving the handling of traffic in crowded centers are numerous, and while there may be good reasons for their non-adoption on certain properties, the committee may perform a useful service for the industry by calling attention to the arguments for and against their use in particular circumstances. Some of the methods listed in the committee's questionnaire are: Loading platforms, skipstops, safety zones, queue loading, double berthing, trailer cars, jitney control, street collectors, elimination of left-hand turns, semaphore control and turnbacks outside of congested districts. All these factors have a bearing on the movement of traffic as well as on the comfort, safety and convenience of passengers. If by the employment of one or more of these methods the car-hours can be reduced, the effect will be apparent on the cost of operation and incidentally on the rate of fare. Until a railway operator is convinced as to the effectiveness of such methods for the particular situation with which he is concerned he will not become an enthusiast. He must become a convert himself before he can convert city authorities or his patrons to the need for progressive methods.

The committee is doing well to stir up interest in such ideas, and when the matter gets around to a report before the convention a general discussion should be arranged with a view to getting the fullest possible light on the subject. The public must be educated to the fact that anything which facilitates the movement of traffic is in its interest.

"Don't Hate Your Customers" Is Good Advice to All

HOMELY principles of salesmanship formed the foundation of the talk of P. S. Arkwright, president of the Georgia Railway & Power Company, printed in last week's issue of this paper. This was a talk to platform men, but a careful perusal of it is recommended to all railway men, particularly managers and executives. It is none too strong to say that there are many of the latter who can, as advantageously as platform men, absorb some of this philosophy and expose themselves to the contagious enthusiasm of Mr. Arkwright. He calls attention to the one necessary element in any salesmanship activity when he points out with telling emphasis that the riders on the cars are the "customers." Not that this idea is new, but a good many people seem to have forgotten it. Confidence in, and respect for, a customer is one of the salesman's first requisites; this and the fact that he has something worth while selling and knows it makes his salesmanship possible. Mr. Arkwright would probably be the last man to claim or even admit that he is a salesman, but his talk is certainly the essence of salesmanship.

It is instructive to study the salesman-customer attitude in another business, namely, the hotel. The hotel, more than any other private business institution, approaches a public utility in its nature—it has service to sell only if and as it has capacity to furnish it. Obviously a room that is empty one night cannot be rented twice the next night to make up for it, any more than an empty car can carry a double load the next trip to make up the loss. Now who fails to notice the difference in manner of the hotel manager in the days when hotel rooms were at a premium and the days when there are more rooms than patrons? It is his manner under the latter conditions which is appreciated and which makes one want to come again.

A little more constant appreciation of these facts is worth while in the railway business. It means practicing salesmanship. It means conducting your business as if you had a competitor. It often means the difference between success and failure. Confidence in your customer, respectful treatment of him and appreciation of the value of what you have to sell him is worth while all down the line.

Executives Should Furnish Inspiration as Well as Education

THERE is an additional feature of the talk to platform men by Mr. Arkwright which is worth attention. It is another instance of the right sort of relation of executive to employee. Various examples have from time to time been mentioned in these columns, but it is a subject which cannot be overemphasized. There are two elements to this relationship. One is education and the other is inspiration.

The educational features—the giving of fact and viewpoint—of this talk are self-evident. But inspiring as the manner or wording may be, the full degree of inspiration can only be attained by the right sort of personal presentation. In this case it had this and railway men can usually give it. Many of them have come up through the ranks. They can talk in the language of the employee and from his point of view, and give him the necessary inspiration.

What is urged here is more constant practice of the act.

The Dull-Time Crop of Jitneys

THE number of jitneys in evidence is increasing very noticeably in many cities. This is undoubtedly a direct result of the widespread unemployment. Men who prospered during the flush times and bought automobiles, and are now out of a job, are getting into the free-lance jitney business as a temporary means of livelihood. Even in Terre Haute, Ind., where the frequent safety-car service supplied a competition that reduced the number of jitneys from more than 200 to nine not strictly competitive, there is now a considerable number of them engaged in picking up the nickels, with little regard for anything else. This flocking of the jobless into the jitney business is particularly noticed in those cities which permit them to operate without restriction as to route and schedule and free from bonds to cover liability in the protection of patrons and other users of the streets. Without any of the responsibilities of the street railway company, this dull-time crop of jitneys, coming as it does when there is a natural falling off in the traffic available, presents a competition that is glaringly unfair. It points to the desirability of securing such ordinances as will place the jitney competition on a fair basis.

The Place of the Engineer in the Electric Railway Organization

DUE TO wartime "suspended animation" in electric railway construction and rehabilitation, the engineer in this branch of industry has not been as conspicuous as he is normally. But he is there, nevertheless, and the work that he has been doing in maintaining the track, the rolling-stock and the power supply has been an important factor in the success of the railways in keeping up service under discouraging conditions. Good engineering will always form the basis of good transportation service, and a recognition of this fact by managers and the engineers themselves is necessary, not only in order that technical men retain their rightful place in the transportation field, but also because it is only thus that good quality of service can be insured.

In an address before the Cornell Society of Engineers, at a meeting held in New York City on April 21, Frank Hedley, president and general manager Interborough Rapid Transit Company, said some pertinent things about engineers. Mr. Hedley certainly knows engineers and engineering. He has to do so properly to select department heads for his great transportation machine. Moreover, he believes in engineers. Listen with the Cornell "grads" to what he says: "It is not essential for a man to have a technical college education. But this one thing is necessary. If he doesn't get his technical education in college he must get it after he starts to work. And it is difficult to get a technical education after putting in a hard day's work. The principal thing is that to be successful a man must show that he can do the job better than some one else, whether he has a college education or gets his technical training while doing practical work. A man who does this cannot be held back."

This paper believes with Mr. Hedley that the engineer is necessary in transportation work, and that the real engineer will forge ahead. The fact that he got his technical training in the railroad shop, and in construction and operating work, does not render Mr. Hedley oblivious to the advantages of the right kind of college training. But the main thing is to have real engineers in the business, college trained or otherwise.

And it is proper to add that, having them there, the "powers that be" should assign them a status commensurate with the importance of their work.

Fares Must Be Sufficient to Meet Depreciation

PUBLIC authorities in control of rates are gradually recognizing that utilities must make adequate provision for depreciation out of earnings and the consequent necessity that fares must be sufficient to permit substantial allowances for this purpose. In both the steam and electric railway industry there have been many examples of the fixing of rates by one body and the fixing of expenses by a second, as an arbitration board or national labor commission. But depreciation is an expense which accumulates without regard to either rate-fixing or expense-fixing bodies of any kind. The omission of depreciation from the year's expense account or from the balance sheet does not affect its existence in any way.

The trustees appointed to operate and administer the affairs of the Boston Elevated Railway under the public control act have met this issue squarely, as is indicated by the statements in their annual report, reviewed in the financial department of this issue. After recognizing the necessity of a change in policy as regards provision for depreciation, they state flatly that no sane management would fail to lay aside from current receipts a sufficient amount to meet renewal and replacement of property that is wearing out. They offer the public no immediate prospect of any decrease in the present 10-cent fare, giving among other reasons for the general advance in fare on practically all street railways this matter of depreciation.

There is nothing new about this situation as far as most of the men in the railway industry are concerned. The trouble has been that, with a shrinking margin between receipts and expenses, the managements have been compelled to seek some means of staving off bankruptcy. Other creditors could not be put off; depreciation allowances, but not the depreciation itself, could be.

The trustees are being subjected to criticism for this position by some elements of the public which are looking only for a possible wedge demanding fare reduction, but the fact should be recognized that every cent provided now for depreciation goes back to the public in better property, which means better service, and in the end the result will be a net saving to the public.

Quotation from the Federal Electric Railways Commission Report

No. 18

ALL transportation service is for the public. Jitneys and automobile buses cannot be repressed merely for the sake of compelling people to ride on the street cars . . . . Unnecessary and destructive competition ought not to be permitted, and the community at large should conserve the established facility that still is and promises to continue for an indefinite period the principal means of local transportation . . . If the street railways are to be allowed the benefits of even a qualified monopoly, they should be required to fulfill their obligations. They must render service that is adequate and convenient at rates that are attractive.

Budget System Which Produces Results

The Rochester & Syracuse Railroad Employs a Simple Means for Predicting Income and Outgo and for the Guidance of Department Heads in Limiting Expenditures—Graphical Presentation of Data Is Largely Used—Close Co-operation Throughout Executive Staff Supplements Budget

By D. E. CROUSE
Chief Engineer Rochester & Syracuse Railroad, Syracuse, N. Y.

FOR some time the Rochester & Syracuse Railroad has been using a budget system which has resulted in increased efficiency, better co-operation among departments and a general reduction in cost of maintenance that has well justified the small outlay on bookkeeping. The method used in building up the budget and the way in which the system functions are briefly as follows:

Preparation of the Trial Budget

Some time before the beginning of the calendar year for which the budget is being constructed the several departments of the company are furnished by the purchasing agent with a price sheet, of the general form shown in Fig. 1. This shows the latest prices of the several materials used by the particular departments for which the information is furnished and the quantities purchased during the current year. By the use of this sheet and comparison with similar previous sheets the department has a basis for arriving at an estimate of the cost of materials for the ensuing year.

After a department head has made a careful analysis of the actual cost sheet for labor and material for the preceding year, which is made up in the form indicated in Fig. 2, he builds an estimate for the coming year and details the items which make up his proposed total expenditure.

We have found that unless department heads are furnished by the auditing department with the costs of materials and labor, itemized separately, they cannot analyze their costs correctly nor build up a budget intelligently.

After the department heads have set up their estimated expenditures under the several standard account numbers the trial budget is ready for criticism by the heads of other departments.

Testing the Trial Budget

The trial budgets are submitted to the scrutiny of the "cabinet," which consists of the auditor, the purchasing agent, the claim and tax agent, the general

- ROCHESTER & SYRACUSE RAILROAD CO. INC. -

PRICES OF MATERIAL FOR ESTIMATING PURPOSES (BUDGET)

D. E. Crouse, Chief Engineer:- December 20, 1919.

Re: Budget - 1 9 2 0.

Referring to conversation in our office a few days ago, we give below prices for estimating purposes on the material for 1920 Budget.

MATERIAL	PRICE	UNIT	DATE	QUANTITY	TOTAL
Axles-Car	.064	Lb.			
Bearings	.37½	Lb.			
Block-Paving-Sq.edge					
Block-Paving-Hose	49.75	M			
Ballast-See Foot Note.					2500.00
Bonds-Rail	34.06	C		... 6000	
Bolts-Track	7.30	Cwt.		... 6600 lbs.	
Boxes-Drain	69.00	M'			
Coal-Hard	6.11	N.T.			
Coal-Soft	4.85	G.T.			
Cement	3.50	Bbl.			
Copper-Armature	27.35	Cwt.		.1000 lbs.	
Fence-Standard Wire	.67	Rod			
Ice for Cars	.60	Cwt.			
Insulators	1.57	Ea.			
Nails-Tie(20)					

ROCHESTER & SYRACUSE RAILROAD COMPANY, Inc.

Estimate of Operating Expenses for Year 1919

WAY AND STRUCTURES

Account	Jan.	Feb.	Mch.	Nov.	Dec.	Acct.	Total	Average per Month
1 Supt. Way & Structures	703.33	732.49	636.16	625.00	625.00	1	7,700.00	641.67
2 Ballast	45.44	66.42	65.14			2	2,000.00	166.67
3 Ties		7.50				3	43,750.00	3,645.63
4 Rails						4	1,500.00	125.00
5 Rail Fastgs.& Joints	27.45	27.45				5	700.00	56.33
6 Special Work						6	300.00	25.00
8 Track & Rdway Expenses	3,157.16	3,162.29	3,160.00	3,160.00	3,160.00	6	54,600.00	4,566.67
6 Misc.Track & Rdway Expe.	24.30	.96	74.74	100.00	100.00	9	1,000.00	83.33
10 Paving		16.25	181.75			10	4,200.00	325.00
11 Cleaning & Sanding Trks.	103.98	68.25	77.77	83.33	63.34	11	1,000.00	63.33
12 Removal of Snow & Ice.	245.11	78.36	250.00	436.53	1,000.00	12	2,000.00	166.67
15 Bridges,Trestles,Culverts	149.65	165.10	584.95	300.00	300.00	15	7,100.00	591.67
16 Crossings,Fences & Signs	163.48	53.27	104.25	100.00	100.00	16	1,400.00	116.67
17 Signal & Interl.Appar.	36.71	36.93	46.86	42.00	42.00	17	500.00	41.67
18 Telep.& Teleg. Lines	314.86	34.05	16.09	15.00	15.00	16	500.00	41.67
16 Misc. Way Expenses						19		
20 Distri.Poles & Fixtures	63.53	116.68	77.76	170.00	100.00	20	1,750.00	145.63
22 Distribution System	1,190.04	314.66	695.06	1,000.00	1,100.00	22	13,300.00	1,106.33
23 Misc.Distrib.System			2.50	2.50	2.50	23	25.00	2.06
24 Bldgs.Fixtures & Grds.	629.81	149.26	296.13	325.00	325.00	24	3,600.00	325.00
25A Depre. Way & Strts.	1,133.59	1,659.39	1,172.39	1,215.45	1,274.95	25A	14,992.69	1,249.41
Total	7.920.56	6,135.53	7,644.12	7,564.61	18,227.79		162,417.66	13,534.63

ENGINEERING DEPARTMENT.

Traced by [illegible]
Approved by [illegible]
January 2, 1920.

Acct	Maintenance of Way + Structures	January 1919 Labor	January 1919 Material	January 1919 Total	February 1919 Labor	February 1919 Mat'l	February 1919 Total	M[...] Labor	Increase or Decrease over 1918	Cents per C.M. and Cost per Month Calendar Year 1919: Labor		Material		Total		Account Number	Estimated Average Cost per Month Calendar Year 1920	Estimated Cost per Year Calendar Year 1920	Increase or Decrease over 1919
1	Superintendance of Ways + Struct	622 31	81 02	703 33	675 73	56 76	732 49	52	1825.96		634 91		52 49		687.40	1			
2	Ballast	45 44		45 44	44 82	21 60	66 42	22	64.33		27 96		1 75		29 71	2			
3	Ties					7.50	7 50		21130.10				4268.80		4268.80	3			
4	Rails								3475.95				310 71		310 71	4			
5	Rail Fastenings + Joints		27.45	27 45		27 45	27 45		1815.65				198 56		198 56	5			
6	Special Work								10.20				12.74		12 74	6			
8	Roadway and Track Labor	3157 16		3157 16	3182 29		3182 29	31[...]	7788.07		4553 59				4553 59	8			
9	Misc Roadway + Track Expenses	22 29	2 01	24 30		96	96	4[...]	114.44		25 39		76 77		102 16	9			
10	Paving				16 25		16 25		5257 06		364 91		267 54		632.45	10			
11	Cleaning + Sanding Track	103 98		103 98	68 25		68 25	12	214.34		62 50		1.27		63.77	11			
12	Removal of Snow + Ice	240.11	5.00	245 11	78 36		78 36	24	9546.36		125.12		.41		125.53	12			
15	Repairs of Bridges, Trestles + Culverts	149 95		149 95	165 10		165 10	23	530.40		301 89		108 49		410.38	15			
16	Repairs of Fences Crossings + Signs	160 48	3.00	163 48	40 55	11 72	52 27	15	400.27		178 26		84.21		267 47	16			
17	Signals + Interlocking Systems	37.30	1 41	38.71	36 93		36 93	2	159.78		23 01		3 07		26.08	17			
18	Telephone + Telegraph Repairs	129 71	185.15	314 86	33 07	98	34 05	4	424.27		51 83		22.53		74.36	18			
19	Other Miscellaneous Way Expenses								92				.49		.49	19			
20	Pole + Fixture Repairs	24 12	69 41	93 53	40 48	69 20	118 68	15	639.75		56 37		72 05		128.42	20			
									7524.19		721 13		594 75		1315 88	37			
50a	Depr Power Plant Bldgs + Equip		377 86	377 86		353 13	353 13												
50b	Power Plant Bldgs + Equip Retired															50b			
57	Sub-station Employees	1901.73		1901 73	1732 56		1732 56	23	3333.83		1830.93				1830.93	57			
58	Sub-station Supplies + Expenses		101.70	101.70			96 37		424.30				57 26		57 26	58			
59c	Electric Energy from other sources		8278 59	8278 59		6041 44	6041 44		7505.22				6748.98	4 07	6748.98	59c			
60	Power Exchanged															60			
	TOTAL POWER	2196 97	8758.15	10956 13	2163 20	6449	8666 69	23[...]	154.94		2160 45		7,407 03	5 77	9,567 48				
	CONDUCTING TRANSPORTATION																		
70	Car House Employees	1596 25		1596 25	1598 90		1598 90	15	4209.05		1703 97				1703 97	70			
71	Car House Expenses	73 71	214 79	288 50		169 13	169 13		246.14		6.14		81.99		75 85	71			
67	Misc Car Service Expenses	2.17	788 66	790 83	86 34	728 93	815 07		9573.06		67 49		550 78		618.17	67			
	Way + Structure & Power Car Miles	171278			153707				1087.72										
	Revenue Car Miles	180713			163883				26091										
	Equipment Car Miles (Total)	182895			165040				160642										
	K W H per Car Mile	6.86			5.56				.21										

SOME OF THE FORMS USED IN COMPILING BUDGET DATA

Fig. 1 (Upper, left)—Materials price sheet furnished to department heads. Fig. 2 (Lower)—Chart used by department heads in forecasting expenditures. Fig. 3 (Upper, right)—Auditor's summary of estimates of operating expenses.

traffic agent, the superintendents and the chief engineer, all under the direction of the general manager, who acts as presiding officer. At a meeting of the cabinet each department head submits his trial budget of expense and describes in detail the method used in arriving at the proposed amount for each account. He then has to show proof why his estimated amount should be allowed to stand.

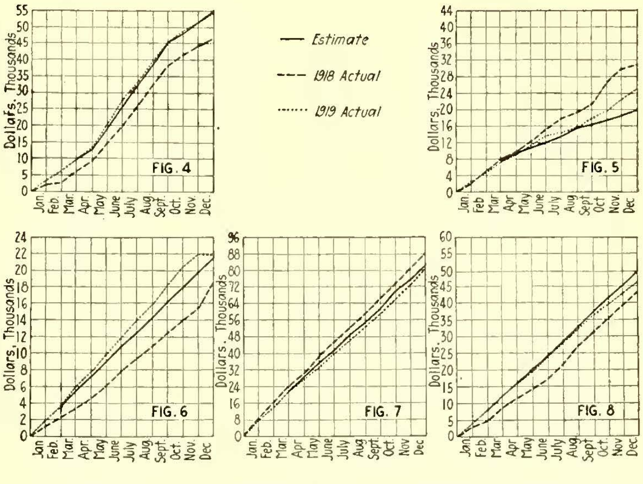
As the usual criticism of the cabinet is in the direction of downward revision of estimates it is obviously necessary that the department head be well fortified if he desires to have his estimates approved.

In the discussion of the proposed expenditures such items as wage contracts and their upward or downward revision, materials costs and the trend of the materials market, weather conditions, etc., are all brought into review. After a budget system has been in effect for several years much good material is available in the records to serve as ammunition for the cabinet to use in bombarding the head who is trying to get his estimate through, so that he is distinctly on the firing line while this procedure is going on.

After the cabinet has arrived at a tentative expense budget the earnings for the ensuing year are estimated. To some it may seem to be a waste of time to estimate future earnings, but it is a fact that in the last budget set up by this company the gross earnings were forecasted within 1 per cent of the actual. It is, in our opinion, just as necessary to set up a bogey for earnings of the traffic department as it is to fix one for the expenses of the mechanical, the way and the power departments.

Obviously, when the earnings as well as the expenses are estimated, it is possible to set up a proposed net income, which after all is the real goal in operation.

With us, after the trial budget has been accepted after revision by the cabinet, the department head turns over his estimate to the auditor, who assembles the budgets.

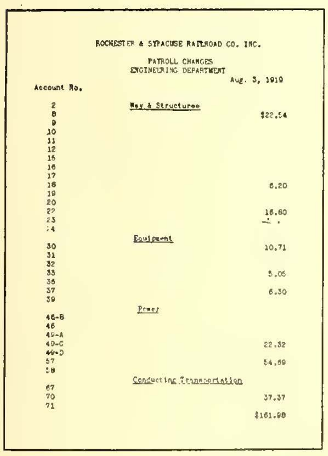


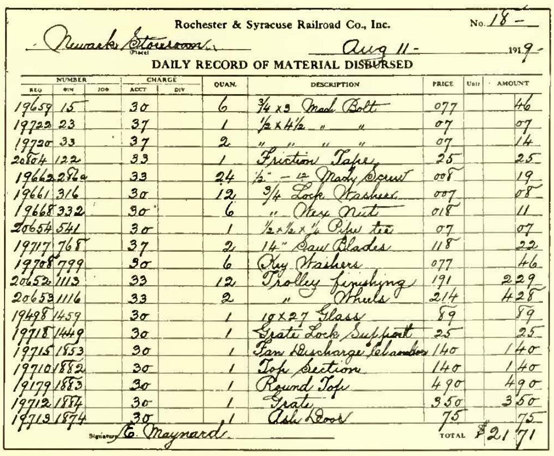
GRAPHICAL REPRESENTATION OF ESTIMATED AND ACTUAL EXPENDITURES BY ACCOUNTS

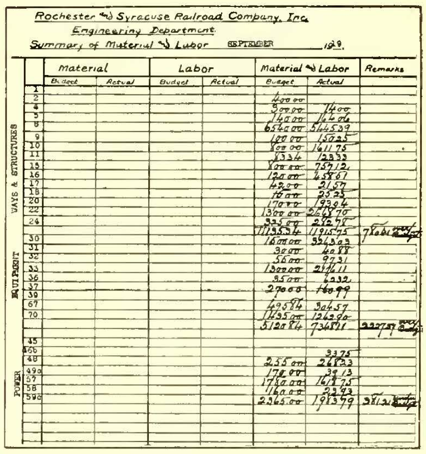
Fig. 4—Account No. 8, roadway and track labor.
Fig. 5—Account No. 33, electrical equipment of cars.
Fig. 6—Account No. 57, substation employees.
Fig. 7—Account No. 59C, electrical energy.
Fig. 8—Account No. 64B, passenger conductors.

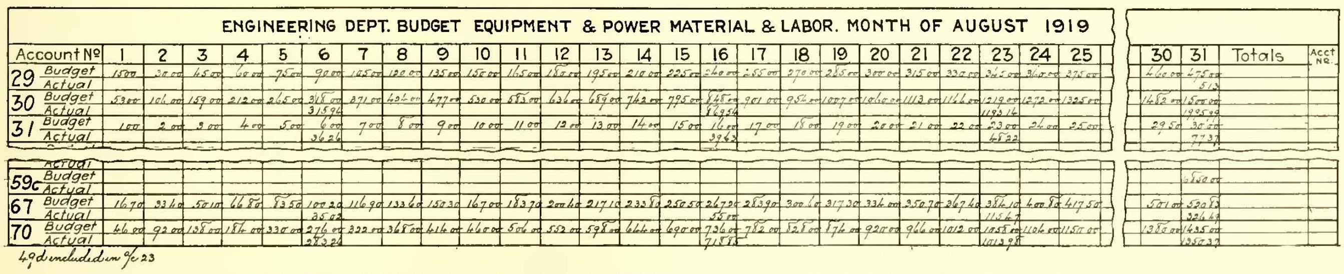
The budget is spread over the year by months, as indicated in the form reproduced in part in Fig. 3. The estimates are put into graphic form, graphs being plotted for each expense item by account number and also for the earnings. Sample graphs are reproduced in Fig. 4 to 8 inclusive. The diagrams show the actual figures for the preceding year and the estimates for the current year. The actual expenditures for the current year are then plotted in as the year advances and serve as a splendid check on variations from the budget estimate.

The efficacy of a budget system depends, of course,









FAMILIAR RECORDS TO ROCHESTER & SYRACUSE DEPARTMENT HEADS

Fig. 9 (Upper, left)—Sample daily list of payroll charges furnished by auditor to the several departments.
Fig. 10 (Upper, middle)—Sample daily record of materials drawn from the storeroom.
Fig. 11 (Upper, right)—Sample summary sheet for daily comparison of expenditures with budget by account numbers.
Fig. 12 (Lower)—General summary sheet for engineering department for typical month.

on the follow-up system. My belief is that there should be a daily check of expense items. When such a check is provided it is possible to control the expense, whereas if a check is made only weekly or monthly it will usually be found that it is too late to adjust the account, the bulk of the money having already been spent. On our property department heads are furnished by the auditor with daily statements of labor expenditures charged to each account number, and also copies of disbursement sheets showing the consumption of material (see Figs. 9 and 10). From these data the labor and materials items are entered on forms like that reproduced in Fig. 11. This is done daily and the expenditures are checked against the budget. A monthly summary, such as that illustrated in Fig. 12, is made up from these sheets.

In our case the department heads meet every two weeks at the general manager's office and review the budget. Hence the system serves not only to permit checking against the budget, but it forces the engineering and mechanical departments to keep themselves constantly advised of the expenditures which they are making, and as to the relation of these expenditures to the other expenditures on the property. The technical departments are mentioned specifically because their expenditures are subject to the greatest variations and control and therefore are most readily amenable to the budget system. Our plan also produces very close co-operation among the department heads as a whole, and the good-natured discussion of proposed expenditures tend to maintain a fine *esprit de corps* in the organization as a whole.

Reliability of the Automatic Substation

Experience of New York State Railways with Automatic Substation Demonstrates Dependability of Automatic Control with Reasonable Care in Inspection and Maintenance—Latest Operating Data Are Given

FOR more than two years the New York State Railways has had in operation an automatic substation on the Rochester & Sodus Bay line at Williamson, which is about 30 miles from Rochester. Details of the construction and operation of this substation were given in a paper by C. L. Cadle before the New York Electric Railway Association, abstracted in the issue of the ELECTRIC RAILWAY JOURNAL for Dec. 20, 1919. The New York State Railways has furnished some recent data as to the operation of the Williamson substation, as follows:

The cost of this substation, one of 250-kw. capacity, which was commissioned in February, 1919, was slightly more than $17,000, of which about one-third was for land and buildings, the remainder being for substation equipment and installation, including supervision. The annual cost of operation is $3,263, which is nearly $5,000 less than would be required for manual operation. The annual cost includes 10 per cent depreciation and fixed charges for land and buildings, $598; 15 per cent for depreciation and fixed charges on machinery, $1,219; actual repairs to equipment, $827; inspection and maintenance, $619. A reactance coil costing $535 was also installed during 1920, which belongs, of course, in the capital account.

During the past year interruptions to service caused by automatic equipment covered 207½ hours, and those due to other causes totaled 137½ hours, a total of 345 hours. The interruptions due to the equipment are subdivided roughly as follows: Relay failures, eight in number, average duration of interruptions, eight hours and five minutes; interlock failures, two interruptions, eleven hours and fifteen minutes; direct-current resistor failures, one interruption, forty-three hours and forty-five minutes; speed-limit-device failures, two interruptions, averaging each fifty-two hours and twenty minutes. External interruptions were due to line trouble, falling of trolley wires, failure of alternating-current power, failure of remote-control apparatus and failure of train dispatcher to cut in remote control.

The inspections given the automatic substation comprise a casual daily "once-over" and a thorough weekly inspection. An employee of the company who lives near by changes record charts and spends a total of one and one-half hours in this duty and in watching the operation, looking, of course, at all parts of the equipment. A "relief operator" spends one day each week in making a thorough inspection, tidying up the substation and filling in the record forms.

As the relief man goes over the apparatus, part by part, he fills in blank spaces on a question form which covers all details of equipment. For example, on the oil switch are these questions: Are all fulcrum pins and cotter pins placed and in good condition? Are all nuts and screws set tight? As to the oil switch mechanism, these are some of the questions: Are all nuts, setscrews and springs tight and in good condition? Are all electrical contacts tight? Are all contacts and fingers clean and in good condition? Is operation satisfactory? In all, a total of about seventy-five questions are asked.

A weekly report on interruptions is also made on an appropriate form, giving, with respect to each interruption, the date, the times of the beginning and ending of each interruption period, the duration and the cause. Space is allowed on the form for explanation, etc.

Special Library Co-operation in Boston

THE special libraries maintained by the Boston (Mass.) Elevated Railway and Stone & Webster have united with those of nine other companies in Boston representing various fields of industry, business and research in the publication of a "Union List of Periodicals and Annuals" taken by the several members of the agreement. This list comprises 750 individual publications, some of which, being extremely specialized or little known outside of particular industries, are often hard to find when wanted for immediate reference. Included, also, are all the well-known technical and trade papers, and the published proceedings of various technical, research and business organizations. The list is sold for a nominal price, which covers the cost of printing only.

By means of this list, and other co-operative measures which they employ, the librarians, or information experts as they really are, are able to secure from each other, by telephone or messenger service, the very latest published information on an extremely wide range of subjects which may be called for at any moment by the business executives whom they serve.

Lewis A. Armistead and George Winthrop Lee, special librarians respectively of the Boston Elevated Railway and Stone & Webster, were largely instrumental in the compilation and publication of the "Union List of Periodicals and Annuals."

The Automatic Substation in Electrolysis Mitigation

Results of Special Investigation Made for Scientific Purposes at Des Moines, Iowa, by the Bureau of Standards Confirm Theoretical Conclusion that Increase in Number of Feeding Points Made Possible by Automatic Control Acts to Reduce Track Gradients and Potentials

BY E. R. SHEPARD
Electrical Engineer United States Bureau of Standards, Washington, D. C.

AMONG the various methods of electrolysis mitigation which have been proposed and used, the use of multiple-feeding points for railway current is considered of primary importance. The practical limit in the number of feeding points is usually set by operating costs, but with the advent of automatic control for railway substations the number of feeding points which can be economically employed has considerably increased. While automatic substations are being installed by railway companies primarily for economic reasons, improved electrolysis conditions will generally follow their installation.

The Des Moines (Iowa) City Railway recently brought to a practical completion a system of automatic substations which is the most extensive for strictly urban use in the country. The engineers of the Bureau of Standards therefore considered that a thorough study of the Des Moines system, with particular reference to the electrolysis situation, would be of technical and scientific value and interest.

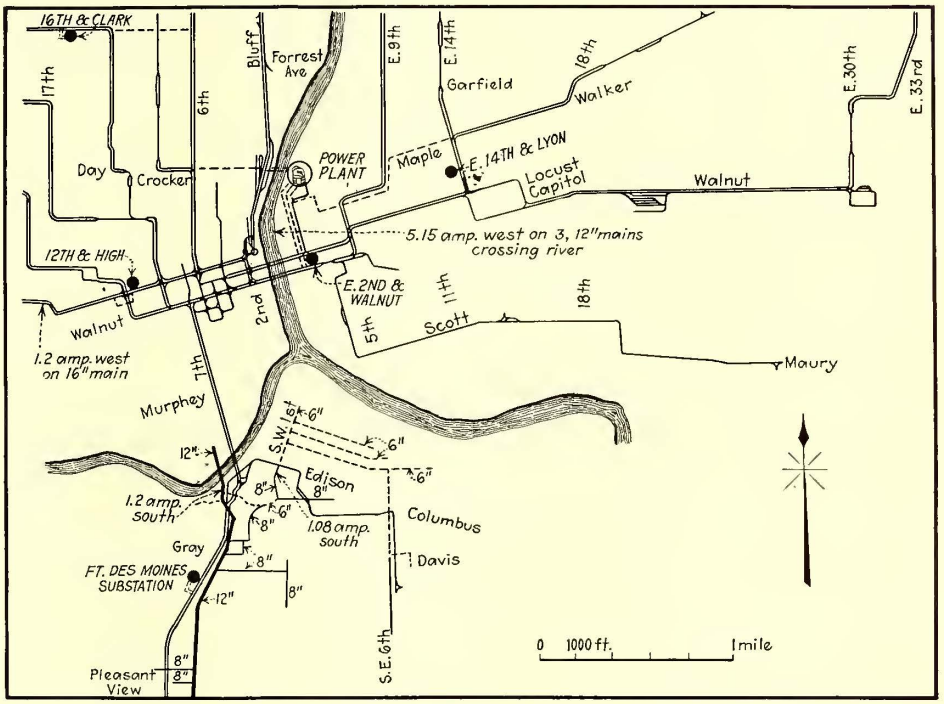


PLATE 1—CHART SHOWING CURRENT FLOW IN WATER MAINS

The Des Moines City Railway and other public utility companies in the city of Des Moines were informally consulted regarding this matter in the spring of 1919 and all agreed to co-operate in a general study of the situation. An investigation, started in September of that year, was carried out under the direction of an engineer of the United States Bureau of Standards. This was made possible through the hearty co-operation of F. C. Chambers and K. J. Keith of the railway company, H. V. Smith and G. Ireland of the Iowa Telephone Company, A. T. Luce of the Des Moines Water Company, H. R. Sterrett of the Des Moines Gas Company, J. M. Pilmer of the Des Moines Electric Company and F. R. Porter of the Western Union Telegraph Company. The necessary technical and field help was furnished by the first-mentioned three companies.

Practically no data are available showing electrolysis conditions prior to the installation of the automatic substations. From all accounts, however, very high over-all potentials existed on the track system as well as high potential differences between tracks and pipes. Measurements previously made were understood to reveal current flow on water main and potential differences which would ordinarily be considered very bad, but an examination of the pipes had shown practically no corrosion. The latter circumstance was attributed to the high resistivity of the soil in the city. The water pipes were electrically drained to the tracks by the negative bus at the power house, and it is said that very heavy currents were carried. The telephone cables were drained to the negative return feeders at several points.

Prior to the present installation of automatic substations, the Des Moines City Railway was supplied from a single feeding point at East Second and Maple Streets, involving feeding distances of 3 miles or more. Now there are six automatic substations in the city and two automatic and one manually operated substations on near-by interurban lines. Each city substation contains one 500-kw. rotary converter. With the exception of the Fair Ground line at East Walnut Street there is no feeding distance more than about 7,000 ft. With the 85 miles of single track operated by the company, including the interurban line, the mileage of track per substation is under ten.

In addition to the substations there is a rotary converter at the power house on East Second and Maple Streets, which carries the night load after the substations have shut down.

The substations at Twelfth and High Streets and at East Second and Walnut Streets operate only during the peak loads, while the other substations operate approximately nineteen hours per day. The operating voltage at the outlying stations is 650, that at the Sixteenth and Clark Streets and at East Fourteenth and Walker Streets substations is 625, while the peak load substations operate at 600 volts. This voltage adjustment is based on peak-load conditions and enables all six substations to carry their proper portions of the load during the peak. As the load drops off, the stations operating at the lower voltages are the first to shut down. In order to prevent the two peak-load stations from coming on and off unnecessarily, the switches in the high-voltage lines which supply them are closed only after the traffic becomes sufficiently great to enable the stations to stay in under the fluctuating load. The load curves of the several stations are shown on page 808, Figs. 2 to 7, and the total system load in Fig. 8. These were determined for a typical day from measurements made on the high-voltage lines, with corrections for transmission and conversion losses. They are only approximately correct.

In the tests, track gradient and over-all potential measurements were made by the aid of about fifty pilot wires loaned by the Iowa Telephone Company. These wires were connected to the tracks at the points indicated in Plate 2. They terminated in the telephone company's exchange on binding posts installed on a map of the railway system, at points corresponding to the actual field locations. The results of the measurements are graphically shown on Plate 2.

The average values of the over-all voltages are practically all under 10 volts. Some unusually high values were observed for short periods, but these conditions were admittedly due to poor bonding. A high gradient was observed on University Avenue, between Thirty-fourth Street and Forty-sixth Street, where the negative feeder from the Polk Boulevard substation connects with the track. This was undoubtedly caused by bad track conditions.

The highest gradient observed in the city was that on the Fort Des Moines line between the substation and the Raccoon River, a distance of about 3,000 ft.

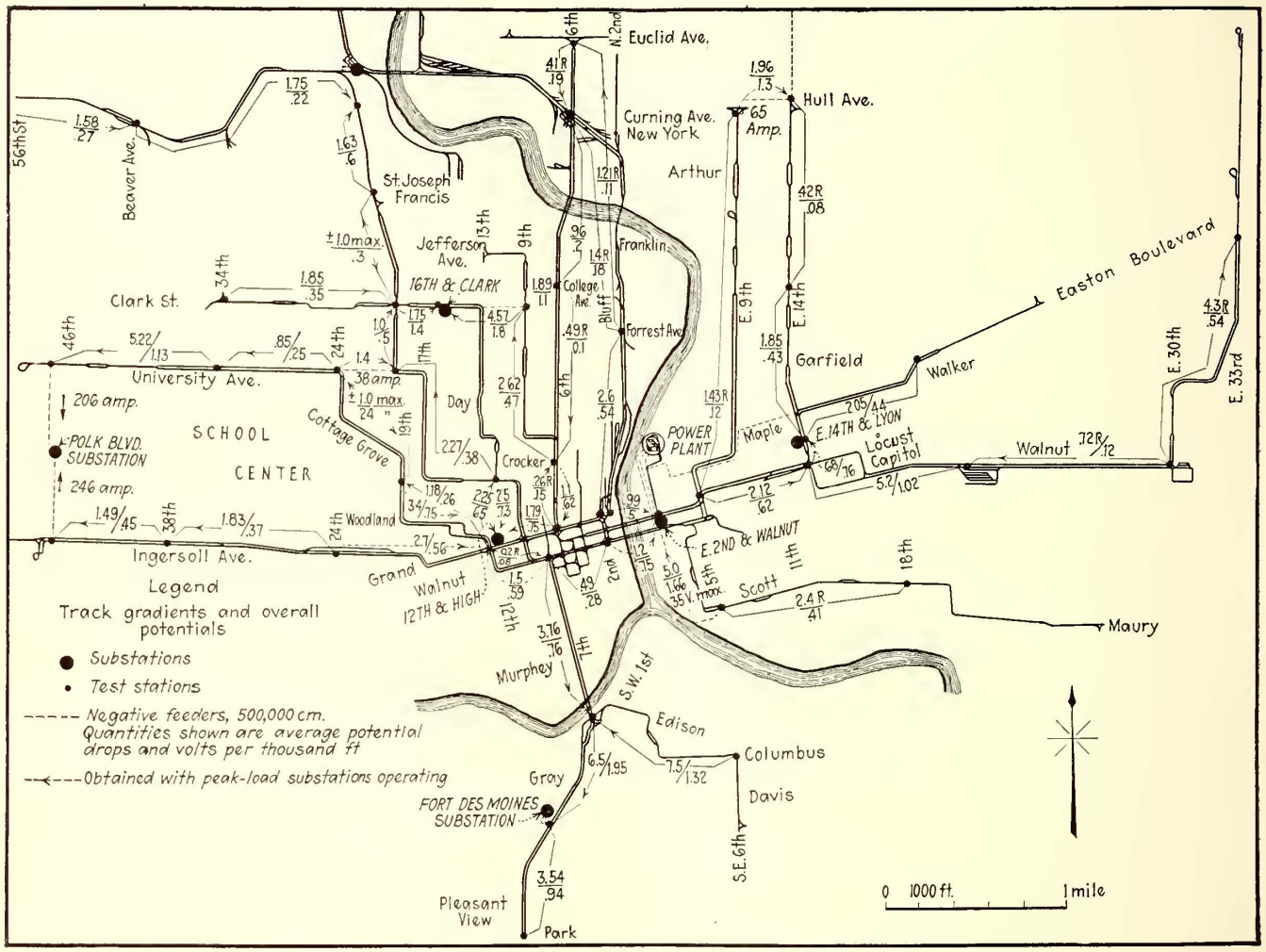


PLATE 2—RESULTS OF SURVEY OF TRACK POTENTIALS AND GRADIENTS

Here the gradient was about two volts per 1,000 ft., due not to poor track conditions but to the very heavy load carried by this substation. The tracks adjacent to the Sixteenth and Clark Streets substation are also heavily loaded, the gradients being 1.4 and 1.8 volts per 1,000 ft. However, as the distances over which these heavy gradients exist are comparatively short, the electrolysis conditions are by no means as serious as those surrounding the Fort Des Moines substation. In all other sections the gradients are comparatively low and within limits usually considered satisfactory.

Potential Difference Measurements

Potential difference measurements between water hydrants and tracks were made in about seventy-five locations, half-hour records being obtained with record-

ing instruments. The results are shown in Plate 3. In the downtown districts measurements were made with and without the peak-load substations operating and both measurements are recorded on Plate 3.

The effect of the poor track on University Avenue is seen in the positive value of 2 volts as compared with 0.24 volt on Ingersoll Avenue. This condition can undoubtedly be greatly improved by repairing all defective bonds on University Avenue.

On the Fort Des Moines line average potential differences between pipes and track as high as 7 volts were observed. There are several factors which mitigate this apparently bad condition, which will be referred to later. In the Sixteenth and Clark Streets

It was generally agreed in the discussion of this subject that the cables should be drained at all substations, but only during such periods as the substations operate. Such an arrangement will require the installation of an automatic switch, at each substation, which will be actuated from the terminals of the rotary converters, so as automatically to connect the drainage cables to the negative busbar during the period of operation. The railway company will install such switches.

It is presumed that the railway will extend a common drainage cable from each such switch to some point convenient for all cable-owning companies to connect to it. It is proposed that the telephone company should

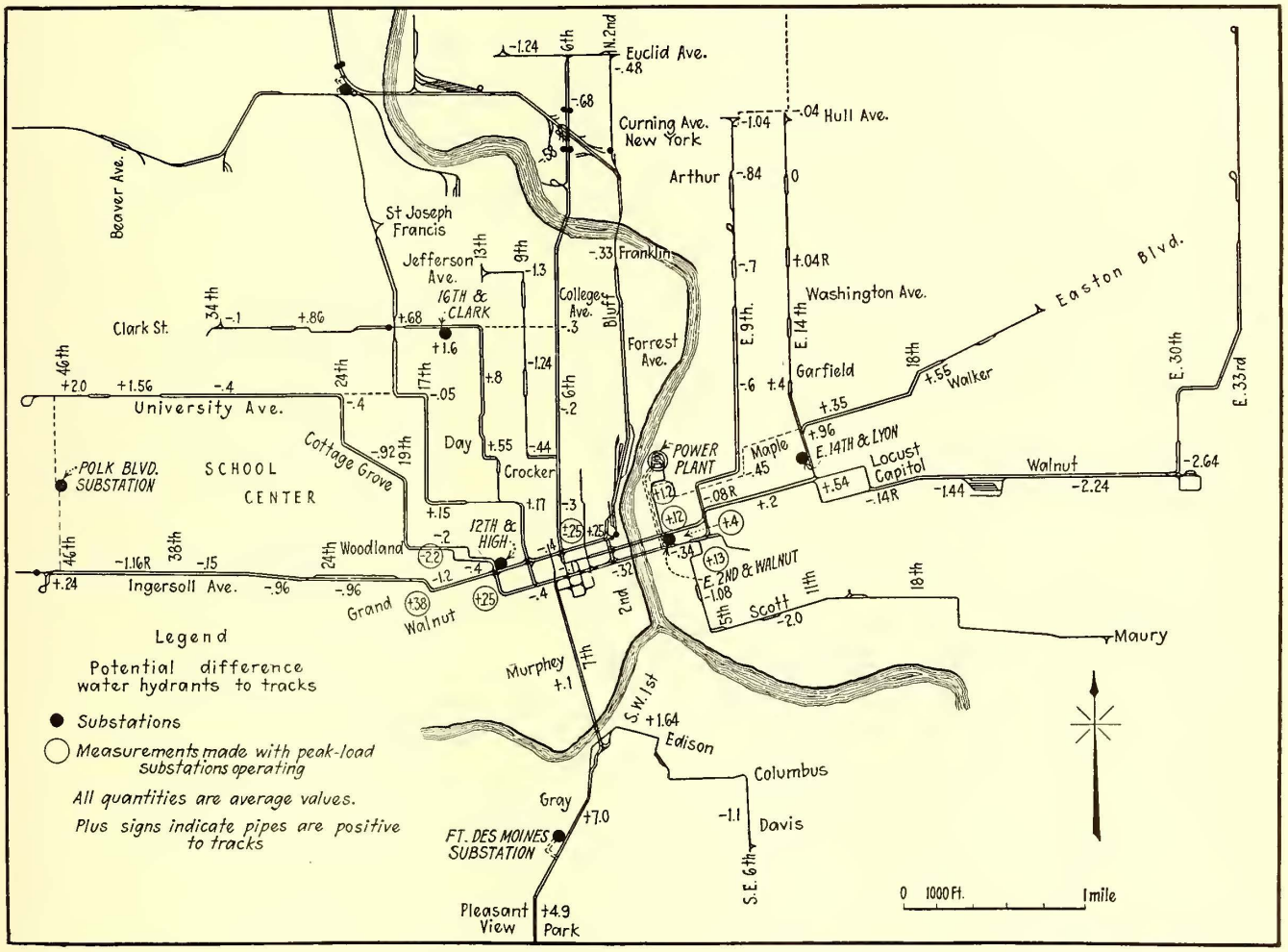


PLATE 3—RESULTS OF POTENTIAL DIFFERENCE MEASUREMENTS BETWEEN WATER HYDRANTS AND TRACKS WITH AND WITHOUT PEAK-LOAD SUBSTATIONS OPERATING

substation district the maximum positive voltage observed was 1.6 volts and in the East Fourteenth and Walker Streets district the maximum positive value was 0.96 volt. In the downtown district a generally negative condition on the pipes prevails when the peak-load stations are not operating, and a positive condition of about 0.25 volt prevails during the period when they are operating. Potential difference measurements between various cable systems and other structures were made in a number of locations. As the drainage of the telephone cables had not been adjusted to the present railway distributing system, they were found to be positive to the earth in all substation districts. It is only during recent months that the substation installation has been completed and put in normal operation.

install a No. 0000 copper drainage wire in each substation district, employing aërial sheaths when necessary to reach the underground plant. Measurements will be made by other cable-owning companies to determine whether their cable system needs drainage.

Current Flow in Water Mains

Measurements of current flow in water mains were made in six locations, the more important of which are shown in Plate 1. All of these currents were small, the largest being 5.15 amp. on three parallel 12-in. cast-iron mains which crossed the Des Moines River on Locust Street.

The highly positive piping system south of the Raccoon River, shown in Plate 1, is supplied by only two water mains from the north, one a 12-in. cast-iron

main crossing the Raccoon River at southwest Ninth Street and the other an 8-in. main on southwest First Street. These pipes were found to be carrying 1.2 amp. and 1.08 amp. respectively. As the railway load from the south is comparatively small, and as the distribution water system is not extensive, it is not likely that any appreciable current is carried into this positive area over the main from the south.

Five soil samples were collected by Mr. Sterrett of the gas company from open trenches in the downtown district and were tested for resistivity. These had an average resistivity of 3,100 ohms for 1 cu.cm. as received, and 1,800 ohms when the samples were saturated with moisture. The latter figure is about three times that for the resistivity of New Orleans soil and about twice that for the soil in the downtown district in St. Louis, but considerably lower than that for Washington and Philadelphia soils. The earth south of the Raccoon River along the Fort Des Moines lines is undoubtedly of a much higher resistivity than the samples tested.

It is apparent from the results of the tests that electrolysis conditions in general have been greatly improved by the installation of the several substations. With one or possibly two exceptions track gradients and over-all track potentials will be reduced to satisfactory values when all the tracks are properly bonded.

The one location where gradients appear to be excessive is south of the Racoon River along Fort Des Moines line. Considering the small amount of current entering the piping system adjacent to the Fort Des Moines station, caused probably by the relatively high resistance of the earth in this locality, the high potential differences observed are not to be taken as a measure of the hazard involved. However, as the current discharged may be largely concentrated at the few points where mains cross under the tracks, it seems desirable to reduce the potential difference between the pipes and the tracks in this area. This could be done either by the use of a 1,000,000-circ.mil insulated negative feeder from the Fort Des Moines substation to the junction point on the tracks south of the Raccoon River, or by a moderate amount of pipe drainage under proper control and supervision.

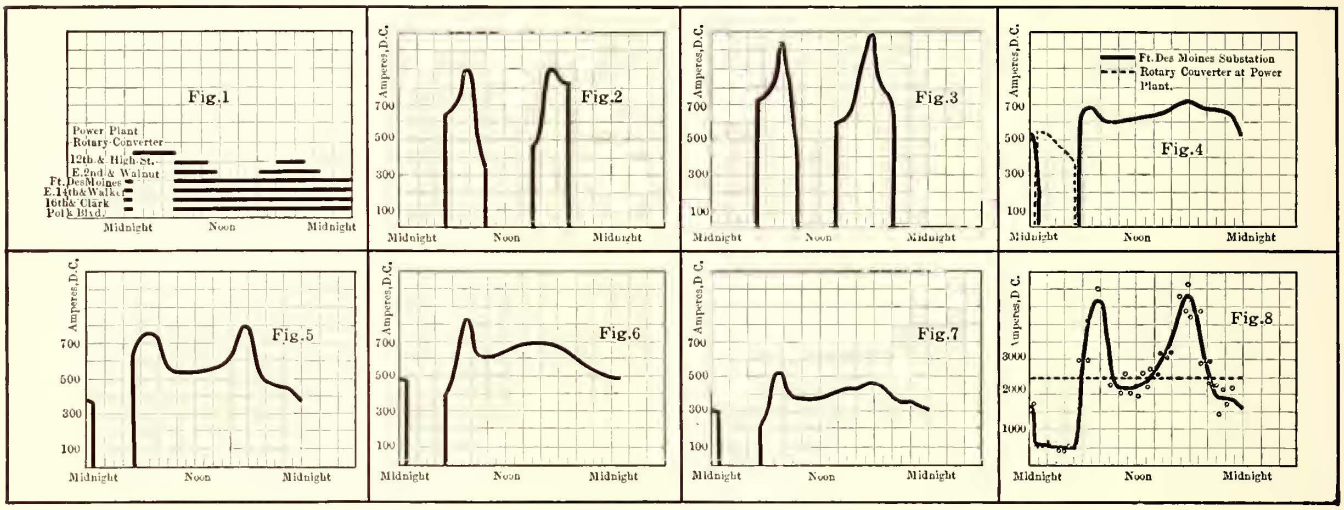
If the first plan were used, the feeder would be 3,000 ft. long, and a resistance would be inserted between the negative bus and the adjacent track to give a potential drop of 10 volts between the track and the negative bus. This would involve an investment cost of $2,400 and an annual cost of $590 for power at one cent per kilowatt-hour.

A similar calculation was made for reducing the potentials in the vicinity of the Sixteenth and Clark Streets substation, although the need of improvement there is not as great as in the other case. Here a 500,000-circ.mil cable 4,000 ft. long with the necessary resistance taps would cost about $1,650 and the annual power cost would be $235.

The pipe drainage would be less expensive, but if this plan is to be employed in the district south of the Raccoon River, a preliminary test is suggested to see if the potential of the pipe can be lowered to proper values without excessive drainage current and to determine if practicable whether any objectionably high resistance joints exist in the 12-in. water main on southwest Ninth Street.

In conclusion it may be said that as a general policy it is very desirable that voltage measurements and inspections should be made from time to time on all cable and piping systems, as changing load conditions and the failure of rail bonds and drainage bonds are more than likely to establish bad local electrolysis conditions.

The importance of track maintenance cannot be too strongly emphasized. This is the prime requisite for good electrolysis conditions and without it no system of mitigation is entirely effective in protecting underground structures.



CHARACTERISTICS OF RAILWAY POWER LOAD AT DES MOINES, IOWA

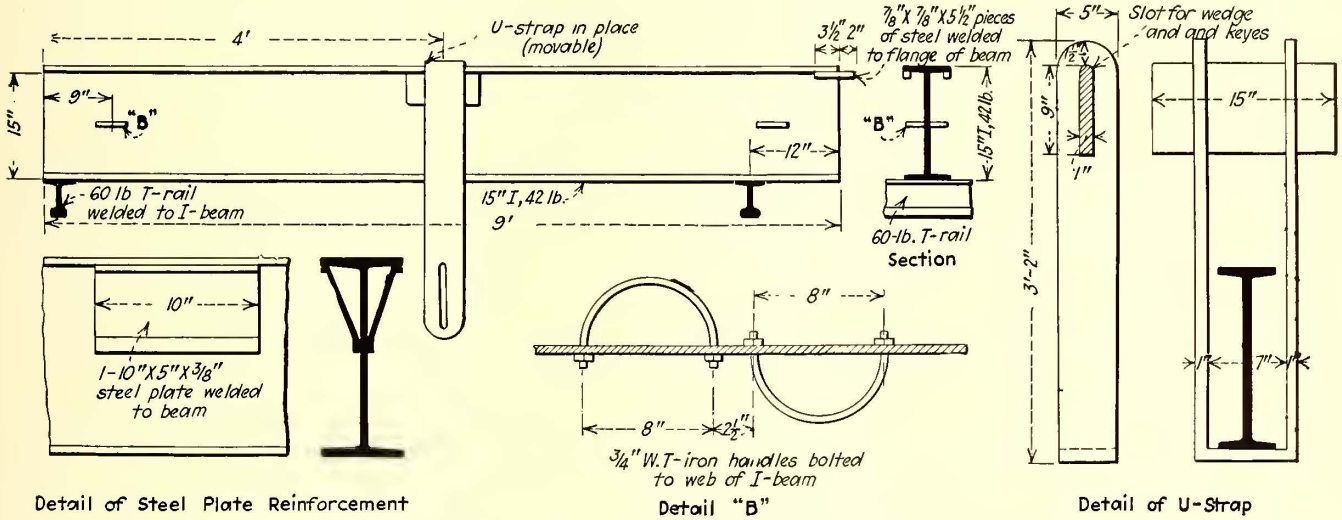
Fig. 1—Normal periods of operation of automatic substations.
Fig. 2—Station load curve, Twelfth and High Streets.
Fig. 3—Station load curve, East Second and Walnut Streets.
Fig. 4—Station load curve, Fort Des Moines substation and rotary converter at power plant.
Fig. 5—Load curve of converter substation at East Fourteenth and Walker Streets.
Fig. 6—Station load curve, Sixteenth and Clark Streets.
Fig. 7—Station load curve, Polk Boulevard.
Fig. 8—Total railway load.

The American Society of Civil Engineers at its 1921 annual meeting accepted the offer of *Engineering News-Record* to establish an "Arthur M. Wellington Prize" to be awarded annually for the best paper presented before the society on any phase of the science and art of transportation. The prize is a memorial in honor of a former editor of *Engineering News* and the author of the well-known book entitled "The Economic Theory of Railway Location."

Rehabilitating Track in Massachusetts

Welding in Various Ways Is Used on a Large Scale—During 1920 the Sum of $1,600,000 Was Spent on Trackwork—Vertical Rail Benders Have Been Perfected—Lighter Track Considered Possible Owing to Extensive Use of One-Man Cars

WELDING will be used extensively for joint maintenance on the property of the Eastern Massachusetts Street Railway during 1921. An extended account of the track maintenance methods followed during 1919 and 1920 on this property was given in a paper presented at a meeting of the New England Street Railway Club on Dec. 2 by Frank B. Walker, engineer maintenance-of-way of the company. This paper was published in abstract on page 1237 of the issue of the ELECTRIC RAILWAY JOURNAL for Dec. 18, 1920, but further particulars will be of interest. A table showing the work done during the past two years is given below:



VERTICAL RAIL BENDER FOR HEAVY RAILS. THE COMPANY USES A LIGHTER TYPE FOR RAILS UP TO 75 LB. PER YARD

TRACKWORK DONE 1919–1920

	1919	1920	Total
Track relaid (feet)	63,560	155,121	218,681
Track overhauled (feet)	*423,520	*472,469	*895,998
Ties installed	98,273	105,252	203,525
Joints Lorain welded	2,333	6,978	9,311
Joints Lincoln welded	306	6,590	6,896
Joints thermit welded	112	1,658	1,770
Joints having new angle bars	No report	1,348	1,348
Joints having surface bends removed	None	10,777	10,777
Joints surface welded	No report	11,475	11,475
Joints bonded	12,771	21,311	34,082
Pieces special work put in	129	479	608

*This figure is larger than it otherwise would be owing to the fact that during part of the time covered some of the reports covered track on which minor repairs only were made.

The cost of the work done during seven months of 1919 was $760,000 and during the active year of 1920 was $1,600,000. This latter sum amounts to $2,353 per mile of track.

WELDING JOINTS

The program of the company for 1921 provides for the welding of from 20,000 to 30,000 joints. As in 1920, thermit welding will be used on all new 9-in. and 7-in. girder rails and arc welding on 9-in. and on 60-lb., 70-lb. and 75-lb. T-rails where the lines are to be overhauled and the joints are not beyond the repairing stage. Arc welding will also be used on new and relaying 60-lb. and 75-lb. T-rails. This means that much arc welding will be employed.

Where old track is being rehabilitated and the angle plates are badly worn the process followed is to put on new plates, if any are available, many sections being obsolete, or to put the old plates on upside down. The bolts are then tightened and if the point is low the ends of the rails are bent up about $\frac{1}{4}$ in. to $\frac{1}{2}$ in. above the level. The bolts are then again tightened and the plates are then seam-welded in position. If the angle plates have been reversed the flange of the one on the inside of the track is then cut off with a torch. No effort is made to cut off the flange on the outside of the track. With a 9-in. girder rail, where it is difficult to get at the top of the plate underneath the tram of the rail, slots are cut in the tram with an acetylene torch to provide access to the top of the plate for welding. An accompanying photograph shows a 75-lb. T-rail with reverse angle plate welded, one side cut off and the other side not cut off. A second photograph shows a 9-in. girder rail with the slots mentioned cut in the tram.

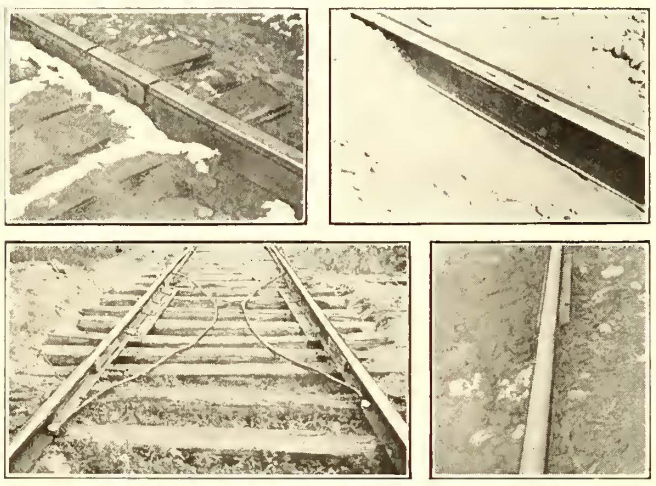
Up to the present the company has been doing its arc welding with a carbon pencil with the rail as the positive pole, the theory being that no carbon can be drawn into the rail by the passage of the current. The company will experiment this year with a metallic pencil and with welds made in a variety of ways to determine which is best.

Practically all joints are now made by welding, even joints in exposed track. Where the track is entirely exposed expansion joints are put at the end of each

curve and every 750 ft. on tangents. It is not expected, however, that these joints will relieve all stresses and strains in the track, as the extent to which the rails will slide over the ties and adjust themselves to expansion and contraction depends upon many causes, including the extent of corrosion between the spikehead and the base of the rail. About 4 miles of open track was welded by the Lorain process last year, and during the winter the breakages did not exceed 2 per cent. These breaks always occurred at the end of the angle or welding bar. An essential feature of the success of track welding consists in having the parts sand blasted or otherwise thoroughly cleaned just before welding. After the welding is done the joint is smoothed down by a grinder.

Rail Benders

A brief description was given in the paper of Mr. Walker before the New England Street Railway Club on Dec. 2 of the home-made vertical rail benders used on the property. There are two types of these benders: One for 9-in. rail is made up of a 15-in. I-beam and one for T-rails up to 75 lb. made up of a 9-in. girder rail. A drawing of the former is shown. The bender of



REPAIRING TRACK IN MASSACHUSETTS

Typical break in arc-welded joint. Slots in tram head of 9-in. girder rail to facilitate joint welding. Expansion joint used with Lorain-welded joints on exposed track. Seam-welded plates reversed on 75-lb. rail.

lighter design is very similar to the other except that it is made up of an old piece of 9-in. rail instead of a 15-in. I-beam. The drawing shows a yoke to go over the top of the bender and under the rail joint, though a chain for this purpose is sometimes used, as in the photograph accompanying Mr. Walker's paper in the issue of Dec. 2, 1920. The yokes are considered better, but trackmen sometimes mislay them and will then use anything handy, as a chain. The jacks used with these benders where a 9-in. 104-lb. girder rail is to be bent are of 30 tons capacity. For lighter rails jacks of less capacity are used.

The operation requires two men and the time taken is about ten minutes from the time that the jack and the bender are moved from one joint to the time they are ready to move to another. The general procedure is about as follows:

The ballast at the joint to be bent is opened up, after which any badly worn plates or bolts are replaced, then the bolts are pulled up tight. The yoke is then placed around the bottom of the plate at the center of the joint and the joint is raised from ¼ in. to ½ in. higher than the general rail surface, the height depending on the sag of the old bend at the joint. Before the jack is released the joint and adjacent ties are tamped.

With the length of bender illustrated it was found that the bending took place not only between the two bender supports but that the rail for several feet away from the bender support was raised. This was considered satisfactory as the deflection is usually 5 or 6 ft. back in each direction from the joint, although the extent of this deflection is not always apparent. Where the bend to be removed is very short an especially short bender is used. It was found also that the splice bars were bent up as well as the rails. Sometimes after these rebent joints had been under service for several days they sagged back, but in that case they were again set up.

Trackmen were instructed to see that the jacks had a firm position, because if they slipped out during the bending process the kick-back would be liable to hurt the men. The Eastern Massachusetts Company has had no injuries from this cause, but other roads have. The use of this rail bender ahead of the Lorain welder on badly surface bent 9-in. girder and light T-rail has also been found to help materially.

The rehabilitation work of the company during the past two years is based on the extended use on the system of one-man cars. In fact, the company is working rapidly toward 100 per cent one-man operation, and it is believed that a lighter track is possible than would otherwise be required. The abandonment by the company last year of freight service helps to make a light track adequate for the service operated.

Changes in Retail Prices of Food in the United States

THE retail food index issued by the United States Department of Labor through the Bureau of Labor Statistics shows that there was a decline of 1 per cent in the retail cost of food to the average family in March as compared with February.

Prices of forty-three food articles are reported to the Bureau of Labor Statistics each month by retail dealers in fifty-one important cities. From these prices average prices are made for each article. These average prices are then weighted according to the quantity of each article consumed in the average workingman's family. From January, 1913, to December, 1920, twenty-two articles of food were used in this index, but from January, 1921, forty-three articles are included in the index number.

For the year period March 15, 1920, to March 15, 1921, the percentage decrease in all articles of food combined was 22 per cent. For the eight-year period, March 15, 1913, to March 15, 1921, the percentage increase in all articles of food, combined, was 61 per cent.

The weighted index number of wholesale prices compiled by the department through the Bureau of Labor Statistics, and in computing which due allowance is made for the relative importance of the different commodities, stands at 162 for March, compared with 167 for February and 177 for January of the present year. The March figure is 36 per cent below that of March, 1920, and over 40 per cent below the high peak of last May. The base used in computing these index numbers is the average for the calendar year 1913.

New York Transit Reviewed*

The City Securities Which Were Issued for the Original Subway Are Shown to Have Been Self-Supporting Until Contracts for the New Lines Were Signed—Later Franchises Are Discussed — The Services of the New Commission Should Be Very Helpful

BY HERMAN A. METZ
Former Comptroller City of New York

IN CONSIDERING the rapid transit question we have to go back to certain fundamentals and understand just what the city can do and cannot do in regard to its transportation question. I believe in home rule as much as any one, but sometimes the home rule principle falls down. The whole history of rapid transit legislation shows that the home rule principle was never considered to any great extent.

Under the original rapid transit act the Legislature created a commission consisting of seven members, five of them former presidents of the Chamber of Commerce of the State of New York, with the Mayor or Comptroller ex-officio members. This body was self-perpetuating. As vacancies occurred, other past-presidents of the Chamber of Commerce were nominated for membership. The city authorities; that is to say, the Board of Estimate, had the power to approve the routes laid out by this commission, pay them the salaries and vote the money for the building of the roads.

This was the commission that laid out the first subway, and after it had been authorized none of the people then interested in railroads in New York would even touch it. It remained for August Belmont to take a chance and equip and operate it under Contract No. 1, which specified that the operating company was to pay the interest and sinking fund on the city's investment of about $45,000,000, so that in reality this subway did not cost the city one cent and the bonds became self-sustaining the moment they were issued.

The contract turned out to be a good one for Mr. Belmont's company, and of course, as usual, agitators began to decry the profits the company was making and demand the abrogation of the contract and do all kinds of things to take it away from the Interborough. If it had been the other way and the Interborough had lost money, no doubt the same people would have chuckled with glee at the prospect of a corporation getting "stuck."

The old commission, however, was a very conservative one, and when the agitation arose for the Fourth Avenue Subway in Brooklyn it refused to sanction the route, although Mr. Belmont personally told me when I was Comptroller he would be willing to undertake the equipment and operation of the Fourth Avenue Subway clear to Coney Island on the same terms as Contract No. 1, and have it connect with the then existing subway for a 5-cent fare over the entire line. Conditions at the Brooklyn Bridge at that time, of course, were abominable and something had to be done. The Hughes-Hearst campaign for the governorship was on and the issue of municipal construction and operation became an important one. Mr. Hughes declared that if elected he would particularly see to it that the conditions on the Brooklyn Bridge were remedied and a new Rapid Transit Commission would be appointed which would handle the question of further facilities fearlessly and promptly. He was elected and redeemed his pledge by fathering the public service commission act and appointing the original Public Service Commission for the First District.

*Abstract of address presented to New York Electrical League, New York, April 13, 1921.

CITY DEMANDS MORE SUBWAYS

This commission immediately took up the Fourth Avenue Subway question, laid out a four-track route, but changed the original route from connecting with the then existing subway to one terminating at the Bowery and Canal Street over the Manhattan Bridge. I took the stand at that time, as Comptroller, when the contract for the first four sections amounting to $18,500,000 was to be approved, that the borrowing capacity of the city did not allow the certification of those contracts. But despite the question of the debt limit or the cost, and the fact that we were building only part of a subway, the final cost of which we had no knowledge, public clamor was so great that the Board of Estimate, as then constituted, would have approved the route and voted the money for the first six sections if I had not enjoined them by court action in a taxpayer's suit to ascertain what the debt limit was.

Under our Constitution New York can issue bonds only up to 10 per cent of the assessed value of its taxable property. This means, of course, that none of the property belonging to the city, state or the federal government can be taxed or assessed for tax purposes, neither can churches, hospitals or charitable institutions be taxed. It was customary whenever the city reached its margin or thereabouts to raise the assessed valuation of property, thus enlarging the borrowing capacity, and religiously see to it that every dollar of such increased margin was appropriated and disposed of within the year.

The courts sustained my contention as to what constituted municipal debt, my chief point having been that authorizations for improvements which had been voted should be considered in ascertaining the borrowing margin. At the time I brought the suit the city of New York had more than one hundred million dollars in authorizations outstanding, every dollar of which could have become debt the moment the borough president or heads of departments for whom the authorizations had been made should advertise and sign the contracts. Up to that time, however, these authorizations had never been considered, and the fact that they were outstanding was a menace which might at any time seriously involve the legality of bonds issued to pay the cost of such improvements.

SELF-SUPPORTING SUBWAY BONDS EXEMPTED

We had exempted from the debt margin bonds issued for water supply, and we had in 1907 and 1908 $45,000,000 of corporate stock (or city bonds) outstanding for

the then existing subways, which were then self-sustaining. We also had about $50,000,000 worth of corporate stock outstanding for docks, which were more than earning the interest and sinking fund upon them. I sent a bill to Albany at the time allowing the city to exempt from its debt margin self-supporting bonds issued for subways or docks, expecting in this way to have released for further construction of subways $45,000,000 and for docks about $50,000,000. When the bill came back from Albany approved, it stipulated that the money could be used for docks and subways, with the result that eventually most of it was used for subways.

Up to that time, while not openly a political matter, politics was played by the Public Service Commission against the Board of Estimate, and during the existence of the injunction not a thing was done by the Public Service Commission so far as bringing anything else but the Fourth Avenue Subway forward, although the increase in assessed valuations had raised our borrowing capacity sufficiently to do work in other directions.

Dual Subway Plan Authorized

In the following election Mayor Gaynor and a fusion Board of Estimate, composed of Messrs. Mitchell, Prendergast and McAneny, were elected on a platform providing for municipal construction and operation of subways and attacks upon the then existing traction companies, the I. R. T. and the B. R. T. But during the life of that board the dual subway contracts were authorized and put into force by which the B. R. T. secured the operation of the Fourth Avenue Subway and extension of that subway up Broadway and into Queens, and the Interborough extension, out to East New York through Eastern Parkway, and the Bronx extension on Jerome Avenue and White Plains Avenue to the Mount Vernon line. Under the terms of these contracts, instead of carrying the interest and sinking fund charges, the companies were relieved of those expenses until they themselves earned a specified return upon their investment, and the city contributed what it had previously received from the Interborough as a preferential toward such earnings. In other words, the city has not since then received one cent, either for interest or for sinking fund, upon the $250,000,000 now invested in the subway system, and will not receive one cent until the companies receive the return provided for in the contracts upon their own invested private capital. Apparently that condition will never arise under contracts with which matters have been complicated.

We, as taxpayers, therefore, are paying into the budget every year for the debt service the amount of interest and sinking fund which should be paid by those using the subway. Our debt service today amounts to about $70,000,000 per year, and although the Constitution provides that the taxes for budgetary purposes; that is, the running expenses of the city, shall not exceed 2 per cent, the debt service is outside of that 2 per cent and may go on rising year after year. We are now on an average rate of 2.80 per cent for the various boroughs for this year, and the Board of Estimate was compelled to cut out of its estimates about $25,000,000 from the Board of Education allotment to keep within the constitutional 2 per cent limit.

In the meantime a 5-cent fare all over the city sounds good, but even with the dual system a passenger has to pay two fares if he goes from South Brooklyn above Forty-second or Fifty-seventh Street in Manhattan, and if by any chance he wants to go across town anywhere in any of the boroughs and needs to take more than one subway or trolley line he has to pay 5 cents each time he gets on a car or even into one of the Hylan buses. A 5-cent fare is a good thing if there is something to ride on, but where the trolley lines have stopped the public is walking.

During Governor Smith's administration attacks were made upon the Public Service Commission, with the result that the law was again changed and we had a double-headed body consisting of the Public Service Commissioner and the Transit Construction Commissioner, with the Board of Estimate having authority to pass upon routes and vote or deny the necessary funds, but with no power to do anything except make faces at the transit company or the receivers, who in the meantime had been appointed by the courts. Something had to be done to lodge authority somewhere to change the situation. The Board of Estimate takes the stand that if the companies cannot run for 5 cents they should lie down and the city will run the subways. Possibly the subways could be run for 5 cents and at a profit, but if everything else in town stopped, and the subways are now saturated to the limit during all hours, how and where would people find transportation facilities?

Facts Necessary Before Solution Is Possible

The only way to solve the problem is to come to a showdown as to just what conditions are and what the cost of operation really amounts to, and the new law creates a commission with power to find out. Undoubtedly the railroad companies have been guilty of all kinds of high finance, and franchises obtained from the city for little or nothing have been manipulated and sold and watered stock issued against them, and leases and contracts with defunct companies are no doubt carried as assets and interest upon them is being charged against operating expenses. These should be wiped out. A franchise on which nothing can be earned is of no value, and bonds issued against such franchises are worth nothing at the present time, and this commission can find out how many such there are.

On the other hand, there is some real money in these corporations, and whatever value their stock has, be it ever so small, should and must be protected and cannot be wiped out entirely by a policy of confiscation. With a clean slate and the real value of properties ascertained, it may well be possible that a method can be evolved by which a 5-cent fare can be maintained and a profit made. But whether this is so or not, the people of New York will be entirely willing to pay for what they get, if they know what it costs, and if as taxpayers we are going to pay for the shortages, we ought to do it as a budget charge and not out of the debt service. This is simply a subterfuge which enables us to exceed the 2 per cent limitation for budget purposes.

The new commission has the power to ascertain the facts necessary for a basis on which to settle the question in the interest of all concerned, and to take the problem out of politics, so that future municipal elections at least will not be influenced by a feeling for or against public corporations, which are and must continue to be under State supervision and control. Until the bonds now outstanding become self-supporting and can carry themselves, the city will not have the means to take over existing transit lines or materially to extend present city-owned subways, and private capital will not unless guaranteed a safe and fair return. Unless, therefore, some means of carrying out either one or the other of these two alternatives is found, stagnation will continue and chaos result.

Turbine Oil Purification

The Continuous Filtration System, Which Retains the Original Lubricating Value of the Oil Almost Indefinitely, Has Practically Superseded Other Purification Methods

IN A RECENT article* Charles H. Bromley enumerates the severe conditions in steam turbine bearings that had to be contended with in the realization of a satisfactory system of lubrication. No satisfactory lubricant has been found which will not deteriorate under continuous use without purification. However, the problem of continuously maintaining the lubricating oil in first-class condition is limited principally to keeping it clean and dissipating the heat which it absorbs. The temperature of the oil in turbine bearings sometimes reaches 180 deg. Fahr., but the normal operating temperature is about 130 deg. This high operating temperature does not present any particular difficulty, for it is merely a matter either of increasing the rate of circulation or of installing more capacity in cooling coils.

On the other hand the problem of keeping the oil clean is most difficult, but its solution eliminates one of the most vulnerable features of turbine operation. One of the troubles encountered in an oil circulating system is that the rapid circulation of from seven to forty times per hour does not give the oil an opportunity to precipitate any moisture or foreign matter picked up in its circulation, nor does it permit the elimination of air or moisture which may have found its way into the oil.

The combination of water, air and heat and the rapid circulation of oil cause it to oxidize and readily form an emulsion, in which a brownish or light chocolate colored sediment is produced. Most of this remains in suspension in the oil if not continuously removed. Emulsion increases at an accelerated rate once a small amount has accumulated. If the oil receives no treatment at all, after a certain time its lubricating qualities disappear entirely. By adding "make-up" oil or "sweetening" oil, this period is only slightly increased, since the impurities, emulsions, sludge, etc., are not removed, but merely diluted.

The "batch" system is an improvement over those already mentioned, for the entire oil charge of the lubricating system is drained at definite intervals and if necessary a fresh supply of clean oil is introduced. The used oil is submitted to a filtration and purification process in which heating of the oil to a high temperature, precipitation and chemical treatments must be resorted to. Since the oil is renovated after it has reached a predetermined state of deterioration by draining the entire system, it becomes necessary to shut down the turbine units each time the oil is changed.

The continuous filtration system, which is almost universally used now, depends for its effectiveness upon continuously removing the moisture and other impurities which cause emulsification and sludge and deteriorate the lubricating value of the oil. Emulsion cannot take place if the impurities which cause it are removed as fast as they occur and will not form as the emulsion builds up.

In this system the oil leaving the bearings is filtered before it is returned to the turbine oil reservoir and is most positive and effective in maintaining the quality of the oil. Due to the small loss, oil of the very highest grade and type can be used economically. The oil becomes an investment rather than an expense.

The continuous by-pass system is extremely simple. It consists of a gravity oil filter and an oil pump. With proper oil and a clean circulating system there is no deterioration of the oil, because the circulation is so rapid keeping impurities in suspension; purification of the whole oil charge is so frequent that no sludge or muck accumulate, all the oil in the system passing through the filter every hour.

The process of purification is accomplished both by precipitation and filtration through closely woven cloth. By the former process oil is brought practically to rest and entrained water and heavy particles of foreign matter are allowed to settle out. The remaining impurities are then removed as the oil passes through the cloth filtering elements.

*See *General Electric Review*, May, 1921. Mr. Bromley was formerly a member of the editorial staff of *Power*.

Train Operation in Kansas City

Kansas City Railways Is Experimenting with a Multiple-Unit Train Having Several Features Contributing to a Quick-Loading Scheme as a Rush-Hour Service Adjunct

WITH the idea in mind of being able to move rapidly a large number of people during the peak-load hours, provided ample provisions were made for quick loading, the officials of the Kansas City (Mo.) Railways have equipped experimentally a two-car train with multiple-unit control and other interesting features. To try out the experiment two old cars which had formerly been equipped with type M control were connected together with a control jumper and bus-line jumper so that the train could be operated with one trolley. Doors were installed on the front and rear platforms of both cars and arranged for air operation. The rear doors were arranged so that they could be opened from the street by a street collector. The platforms of these cars were rather short and consequently it was impossible to make the doors as wide as was desired, but by constructing them with two panels and by various experimenting they were made fairly satisfactory.

An arrangement was also worked out whereby the brakes are released as the doors close. A buzzer system whereby the conductor on the rear car can signal the crew on the first car was installed, the buttons for passengers not being connected through between the two cars. The compressors on the two cars were tied together electrically so that both start simultaneously whenever either governor cuts in. This arrangement was made in order to keep both compressors working if the adjustments of the governors were different.

Some difficulty was at first experienced in securing the proper operation of the electric switches located at numerous points over the system. This difficulty developed from the fact that both cars were taking energy from one trolley, so that the added load of the compressor, heaters and lights of the second car caused the switches to take the power-on position when the controller was in the off position. This was overcome by placing the heater switch for one car where the motorman could cut out the heaters when operating the electric switches.

The train has been operated with a crew of three men, a motorman and conductor on the first car and a conductor on the front end of the rear car. When the train passes through the congested district in the

rush hour a street collector opens the rear door of the rear car from the street and collects fares from passengers boarding there. An additional street collector takes his position at the front door of the front car, so that the train is loaded through four doors at the same time. A further development in this connection, looking toward better efficiency, is contemplated.

This train has now been in operation for a number of weeks, with the result that it is felt that the idea is practical and capable of development. In speaking of this experiment Henry S. Day, equipment engineer, said: "We are taking our time in studying the operation of this train, and if we decide eventually to equip a number of trains for this service we shall equip them with a modern type of multiple-unit control and further develop the idea of rapid loading, which is, of course, absolutely necessary when a unit of this type is to be run on a line with single cars. We are now operating this equipment in the manner indicated and running on time, and I believe we can very much improve a good many features of the train as it now stands."

If the plan is carried out the multiple-unit control will probably be installed on some of the heavier types of cars owned by the company, which are not now run except in the rush hours. These cars can be utilized for rush-hour service and permitted to stand idle during the remainder of the day satisfactorily, for operation of these heavy cars during light-loading periods is of course very uneconomical, particularly in Kansas City, where there are many grades, some excessive, on all of the lines.

To Honor British Engineers

THE organized engineers of America will send a mission to London this summer to express the obligation which the world owes to the engineers of Great Britain for the part they played in winning the war. This mission, consisting of nationally known engineers and representing the so-called Founder Societies, will also make the award of the John Fritz medal to Sir Robert Hadfield at the opening meeting of the British Institution of Civil Engineers on June 29. The inability of Sir Robert to come to the United States to receive the medal moved the trustees of the John Fritz Medal Board of Award to make the ceremony of presentation in England the occasion for an international expression of appreciation by the engineers of the United States to the engineers of Great Britain.

The deputation to England will consist of Charles T. Main of Boston, representing the American Society of Civil Engineers; Colonel Arthur F. Dwight of New York, the American Institute of Mining and Metallurgical Engineers; Ambrose Swasey of Cleveland, the Joint Fritz Medal Board of Award and the American Society of Mechanical Engineers, and Dr. F. B. Jewett of New York, the American Institute of Electrical Engineers. Dr. Ira M. Hollis, president Worcester Polytechnic Institute and past-president American Society of Mechanical Engineers, will accompany the deputation and bear the message from the American engineers.

The adjustable seats for motormen on the Berlin street railways are fitted with an arm attached to the main support of the seat and about one-third of the way down. This arm passes between the legs of the motorman at about the height of his knees and helps to steady the seat when it is in use.

Two Years of Service

How the Illinois Committee on Public Utility Information Has Helped the Utilities of that State—Its Help Sought from All Parts of Country

THE Illinois Committee on Public Utility Information is two years old this month. It celebrates its second anniversary by passing the 5,000,000 mark in pieces of literature distributed. Its work has been so successful that similar bodies have been organized in nine other states—Indiana, Kentucky, Ohio, Nebraska, Missouri, Oklahoma, Arkansas, Wisconsin and Michigan—and its help is constantly sought, from all parts of the country, by newspapers wanting data pertinent to current news, by high school and college students facing a debate or a thesis, by lecturers wanting to freshen up platform material, by writers of circular, publicity and advertising matter for investment houses and so on.

Samuel Insull of the Commonwealth Edison Company is largely responsible for the organization of the committee. He conceived the general scheme and with the co-operation of both Bell and independent telephone interests the original membership of the committee in April, 1919, came to be as follows: John F. Gilchrist, vice-president Commonwealth Edison Company, chairman; Martin J. Insull, vice-president Middle West Utilities Company; Charles A. Munroe, vice-president Public Service Company of Northern Illinois and People's Gas Light & Coke Company (now president of American Gas Association); Britton I. Budd, president Chicago Elevated Railways; Bernard J. Mullaney, manager Public Relations Department, People's Gas Light & Coke Company; Clifford Arrick, publicity manager Chicago (now Illinois Bell) Telephone Company; W. S. Vivian, secretary-treasurer United States Independent Telephone Association.

The result is practically every electric, gas, electric railway and telephone company in the state is now co-operating and is represented on the (enlarged) committee through members designated by the state electric, gas, electric railway and telephone associations. The committee's work was organized and is still guided by Mr. Mullaney as director and H. M. Lytle, former financial editor of the Chicago *Record-Herald*, as associate director.

Out of the experience of all concerned in this Illinois campaign have come certain definite conclusions in relation to work of this character, among them the following:

Two important factors in the committee's success have been: (1) The careful way in which its work is done so that no accusation may lie against it of trying to mislead the public, and (2) the motive power supplied by the weekly meetings of the committee and the facilities of the committee members for getting close to local managers and spurring them to co-operative action.

This proximity and local contact are essentials usually lacking in educational campaigns of national scope, when directed from one central point. The Red Cross, the Liberty Loan, the Salvation Army and other war organizations found they could not get publicity results by operating nationally; they had to organize regionally by states and by communities. The Illinois plan establishes this local contact and, when adopted in every state, provides the machinery for giving national scope and effect to any kind of utility campaign, whether general or special.

ELECTRIC RAILWAY PUBLICITY

Devoted to How to Tell the Story

Safety Car Boosting in Los Angeles

An Illuminated Map Is Used in Conjunction with a Chart to Show the Development of Safety Car Operation Throughout the United States

ILLUSTRATING the number of safety cars in the United States and the growth in orders from 1915 to 1920, an illuminated map, which was exhibited by the Westinghouse Electric & Manufacturing Company at the Atlantic City convention of the American Electric Railway Association, is being displayed by the Los Angeles (Cal.) Railway. The map has been mounted in the lobby of the main offices and has attracted widespread attention.

The map measures 7 ft. x 11 ft. and shows every city that operates safety cars. With the map is a chart showing the curve of orders from two cars in 1915 to 2,100 in 1920, with a total of approximately 4,400. As the first lights appear on the chart, corresponding lights appear on the map showing the cities in which the early deliveries were made. This scheme of corresponding lights on the chart and the map continues until the entire map is illuminated.

The number of safety cars in each city is indicated by the color of the light. A white light shows fewer than twenty-five safety cars; blue from twenty-five to forty-nine; green, from forty-nine to ninety-nine, and red for more than 100.

The significance of the map is explained by cards attached to it, and pictures of safety cars in operation on Los Angeles streets have been placed with the exhibit.

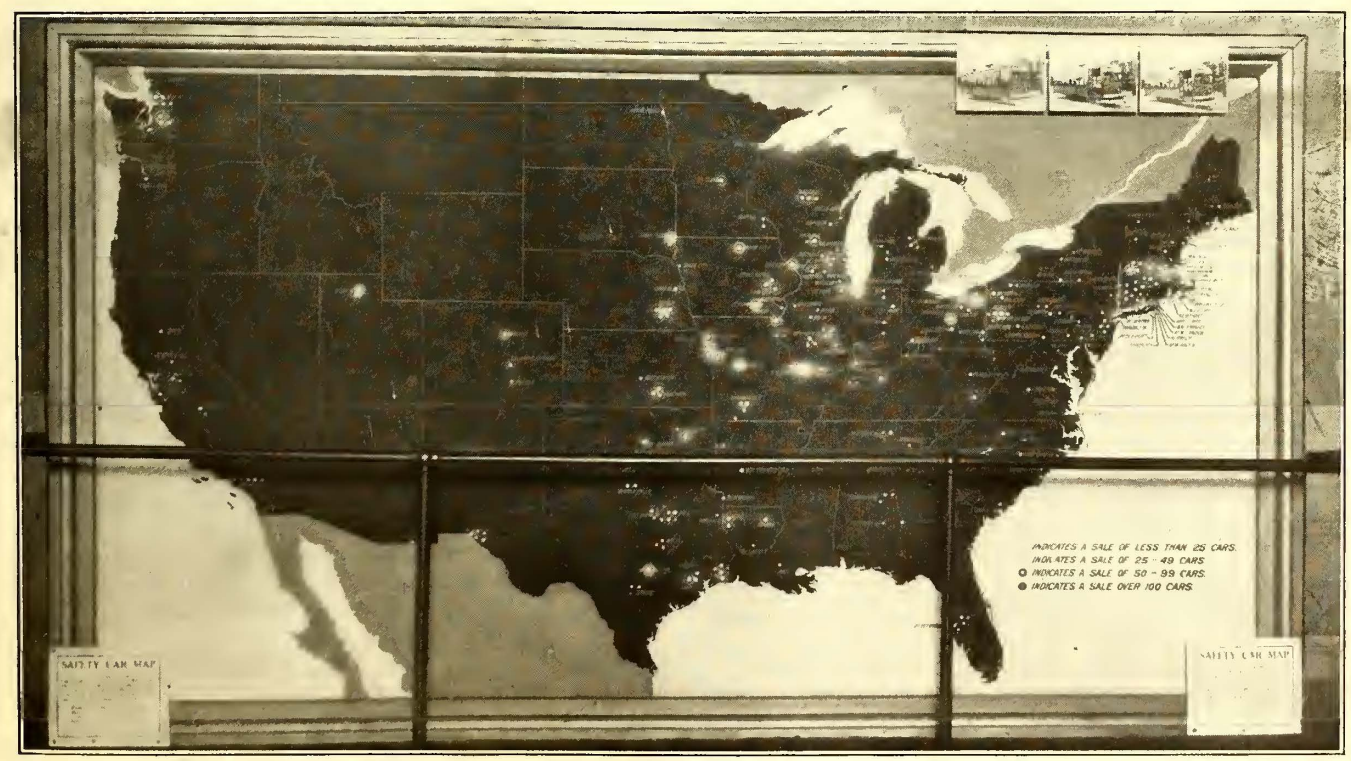
Cards in all street cars advertise the map and invite those interested in street car service to inspect the exhibit. Newspaper publicity and advertising have been utilized, particularly in community papers of the districts served by safety cars.

The exhibit was used in connection with the establishment of safety car service on two lines of the Los Angeles Railway running through the downtown district. Following the display of the map in the main offices, it is planned to place it in a store window in the main part of the city.

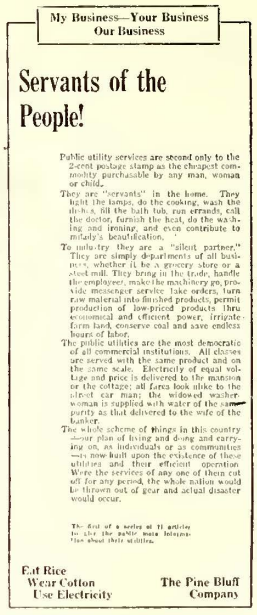
A Campaign of Instruction

THE Pine Bluff (Ark.) Company recently undertook a campaign to give the public more information about the utilities. A method was employed similar to that effectively used in the Doherty thrift campaign. The series was made up of fourteen articles, which appeared at more or less regular intervals in the local newspaper.

The aim of this publicity was merely to get the people thinking about the utilities. The first one told how dependent a community is upon the existence of the utilities and their efficient operation. The second said that the community's biggest single investment is in its utilities and that in Arkansas they pay more than one-fifth of all the state taxes. In another the fact was



ILLUMINATED KEY MAP AND CHART SHOWING THE GROWTH OF SAFETY CAR SERVICE



AT LEFT, AN ADVERTISEMENT IMPRESSING THE RESULT OF CARELESSNESS. AT RIGHT, THE FIRST ARTICLE OF THE SERIES GIVING INFORMATION ABOUT THE UTILITIES

brought out that every community is known and judged by its utilities; that where the service of utilities is not efficient, experience warrants the deduction that some influence is at work which threatens the desirability of that community as a place of residence and occupation, making it a good place in which not to invest money—a good place to stay away from. Thus, in the series of articles the facts are laid before the public in an unbiased and matter-of-fact way.

Besides this educational campaign the Pine Bluff Company has tried to promote the safety movement by the insertion in the newspapers of advertisements which bring home to the reader the penalty of carelessness and thoughtlessness. One that appeared recently is reproduced herewith.

Courtesy an Essential of Service

THE courtesy of employees on the properties managed by Britton I. Budd, the Chicago Elevated Railways, the Chicago, North Shore & Milwaukee Railroad and the Chicago & Interurban Traction Company, has frequently been the cause of complimentary comment on the part of patrons. This is particularly true of the trainmen on the North Shore Line, a fact that has undoubtedly contributed materially to the great growth in the passenger business of this high-speed interurban.

A recent letter sent out to all employees by Mr. Budd is an example of how the employees are impressed with the importance and essentiality of courtesy in dealing with the public.

The letter follows:

It has been the established principle of the elevated lines for many years that the employees must be courteous, considerate and kindly in all of their dealings with the public. The majority of the employees have become noted and are often commended for these qualities. There are some few, however, who are an exception to the rule and there are others who do not make the effort which they should. Little attentions and courtesies make your day's work easier, cost nothing and are essential to maintaining the good opinion of the public.

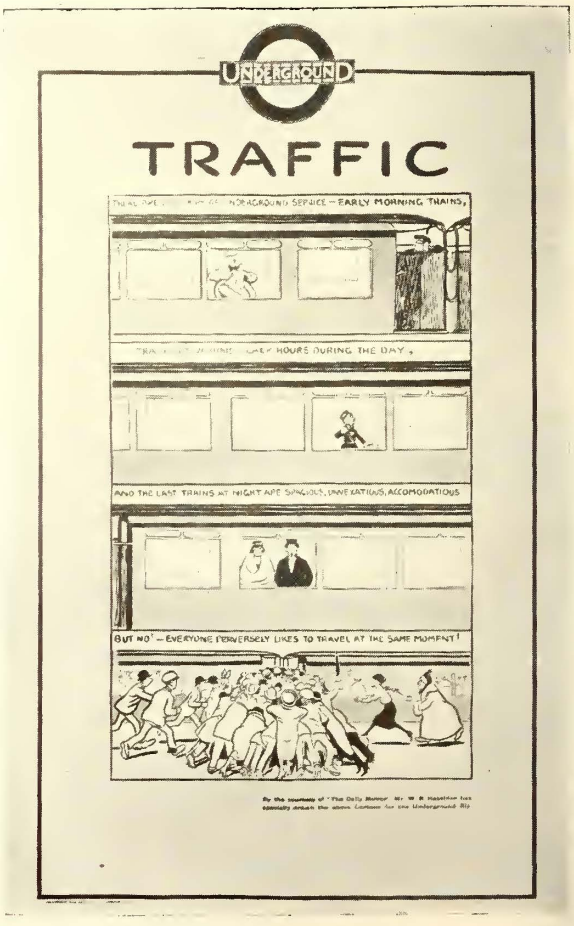
You are all salesmen and saleswomen, selling the only product the company has, which is transportation. If you patronize stores where you are gruffly treated or where your patronage is not welcome and you do not receive proper attention, even if it might not be termed discourteous, you transfer your patronage elsewhere. Transportation on any particular line is not compulsory and people will go where they are treated with the most consideration and obtain the best service. The attitude of the employees is one of the biggest elements in the word "service." Service performed by employees which in their relations with passengers may not be required of them very frequently offsets some inconvenience a passenger may have met.

The public is well aware that the increase in fares is largely, if not wholly, due to the increase in wages which you have received. In other words, passengers are paying you your increased wages, and when they meet with discourtesy, indifference and lack of consideration, it is perfectly natural that they should resent it.

Hereafter, any employee coming in contact with the public as a representative of the company, who is discourteous, indifferent or incapable of reflecting the spirit which actuates a majority of the employees, will be considered a detriment to the interests of both the employees and the company, and his or her services with the company will be dispensed with.

Lady, Lady, Shopping

(5:30 P. M. in the Evening)



LADY, Lady, shopping—
Rather late you're stopping!
Can't you get your shopping done
Till the evening's well begun?

Lady, Lady, hunting
Half a yard of bunting—
Can't you search that bargain store
'Twixt the hours of ten and four?

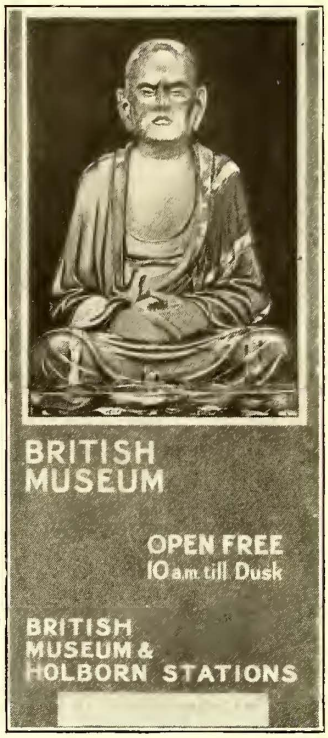
More of London's Merchandising Picture Talks

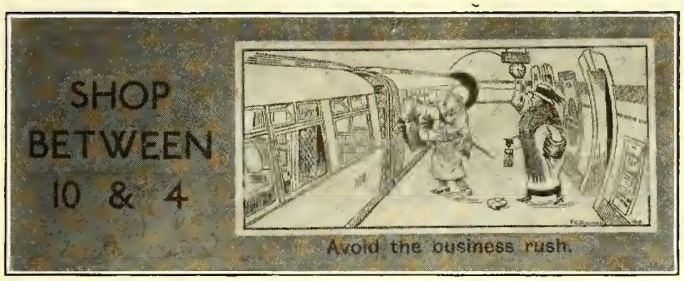
Attractive Colored Posters Used to Advertise Points of Interest Reached

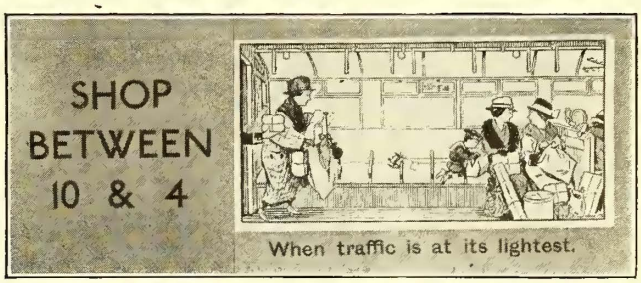
FEW ELECTRIC or steam railroads in this country carry out the transportation merchandising plan of the London Underground System. The accompanying illustrations show miniatures of some of the posters that have recently been put out to develop new traffic and to spread out the existing traffic on its lines. Some of these posters are intended for display in the stations on billboards, while those urging patrons to shop outside the rush hours are for display in the cars.

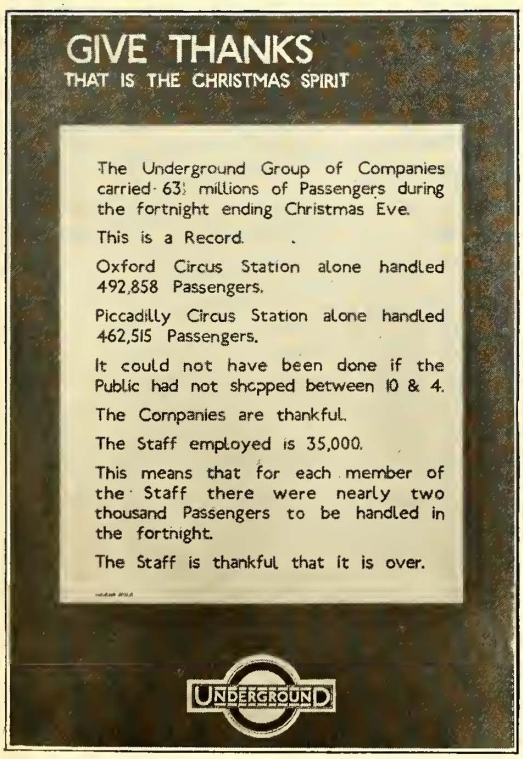
The merchandising idea of selling service is portrayed in these posters in a variety of effective appeals. Take, for instance, the zoo poster with its animal border. This creates an immediate desire to see them alive—hence a ride. The same can be said of the museum posters.

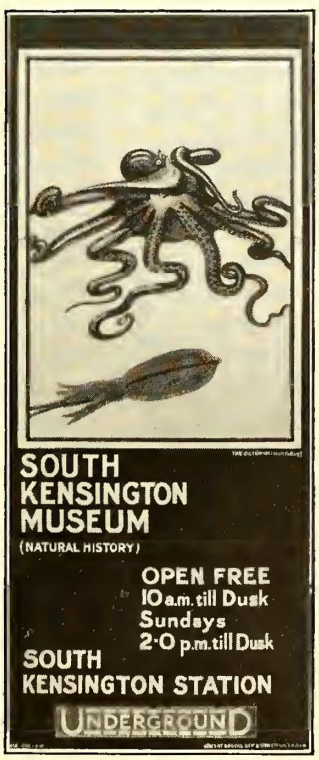
The ideas in the poster "Give Thanks" undoubtedly express the feelings of many a manager and operating man after a period of heavy traffic—but unfortunately very few if any have taken it upon themselves to capitalize the favorable feeling that the public has toward them after such a period. What a chance they have lost to hold the graces of their patrons! Traffic managers that take these ideas and apply them to local points of interest will not only be selling their own product but will be boosting the community served.

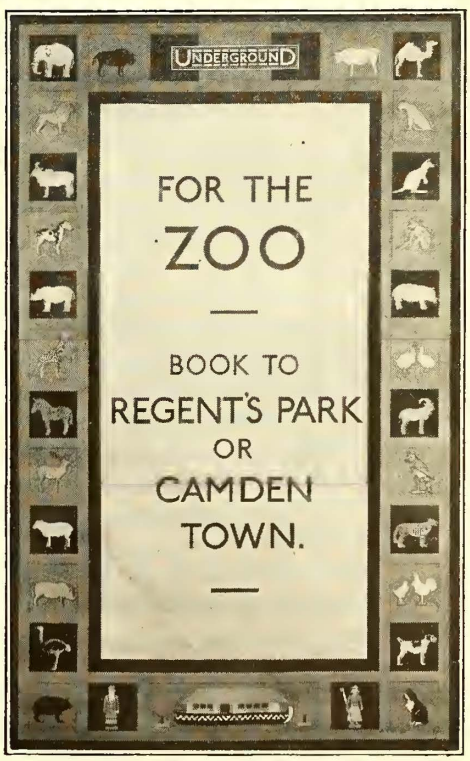












New Line of Switchboard Instruments

SWITCHBOARD VOLTMETER

THE Westinghouse Electric & Manufacturing Company has just placed upon the market a new line of ammeters and voltmeters for switchboard use. These instruments operate on the D'Arsonval principle and the movement, complete with the core and pole pieces assembled, can be removed as a unit, thus facilitating inspection and repairs. These instruments are designated as type SX and are finished in a dull black marine. The overall dimensions are 7 7/16 in. in diameter and 2 13/32 in. deep. The weight of each instrument is 9 lb.

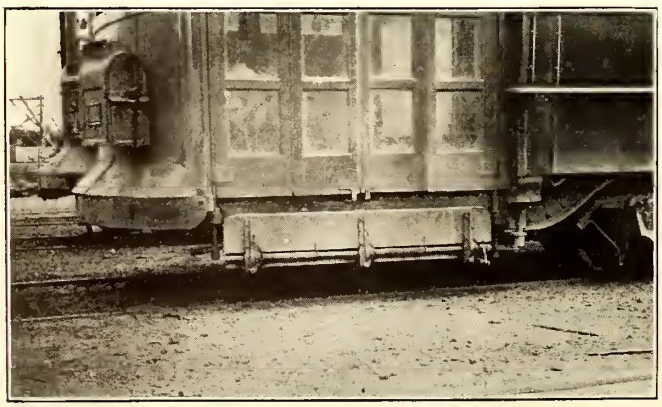
Making Breaker Arms Safe

SAFETY DEVICE FOR BREAKER ARM

TO PREVENT an operator from coming in contact with the metal part of a breaker arm while taking hold of the handle, J. O. Penisten, superintendent of power distribution of the Union Traction Company of Indiana, has developed the safety device shown herewith. It consists of two large insulating disks placed at the sides of the handhold on the alternating-current circuit breaker arms of substation switchboards. As ordinarily constructed, the operator is quite liable to slide his hand over so as to come in contact with the metal arm while some part of his body is in contact with a ground. The use of these insulating disks makes it impossible for the operator to touch the metal arm of the breaker in its ordinary operation.

A Balanced Folding Car Step

A SCHEME for hanging folding steps has been devised by C. R. McMahon, master mechanic Des Moines (Iowa) City Railway, which materially lightens the labor involved in operating the step and door mechanism. The scheme consists simply of mounting the step so that the axis or hinge point is about one-third of the way out on the step board, instead of being at the inner edge of the step as is usually the case. This one-third of the step on the inside of the hanger acts as a counterbalance against the other two-thirds as the step is raised. In other words, instead of having to pull up the weight of a step 12 in. wide, the operator has only to lift the weight of an 8-in. width step, counterbalanced by the other 4 in. The step mounting is shown in an accompanying picture.

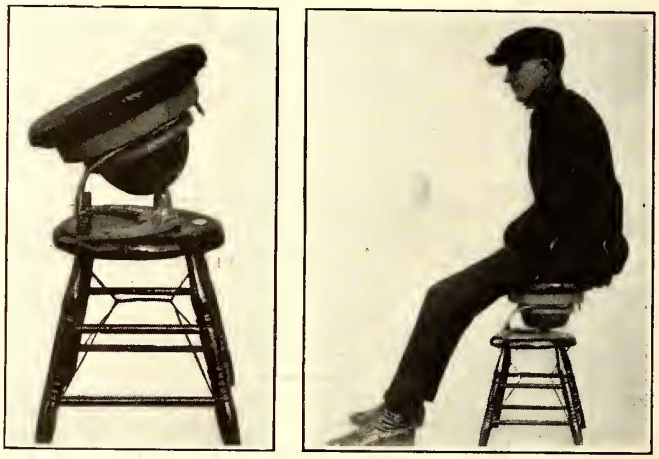


COUNTER-BALANCED STEP MOUNTING USED IN DES MOINES

Pneumatic Seat for Motormen

THE accompanying illustrations show a new type of pneumatic seat which has been in use on two cars of the San Francisco, Napa & Calistoga Railway during the past three months. It has proved so satisfactory that the company is now installing this device on the remaining cars of the system. It is the design of Henry Seibel of San Francisco.

In the construction of the seat an air cushion takes the place of steel springs, which are sometimes used, and absorbs the vibration. This air cushion consists of an inner tube, an outer flexible casing and a deformer. Both the inner tube and the outer flexible casing are made of rubber. The inner tube is in one piece, the upper part being inclosed in a rigid casing, while the lower end fits into the flexible casing. A check valve is inclosed in the inner tube to facilitate its being filled with air. As now used the seat is attached to a short-legged stool.



NEW TYPE PNEUMATIC SEAT FOR MOTORMAN

Saves Commutators

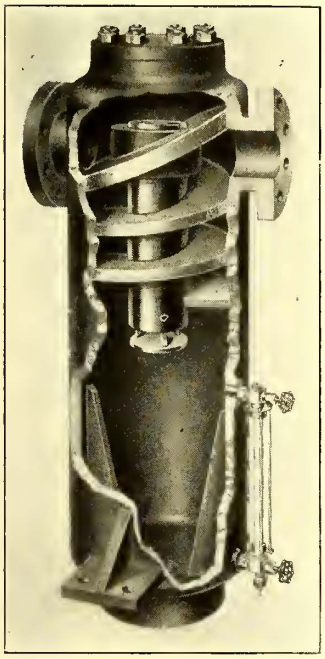
A NEW, easy and most economical means of keeping oil from working into the ends of commutators is now being used by the Pittsburgh (Pa.) Railways. After trying all the well-known methods of taping, wrapping with string, etc., a "dope" was evolved which does the work most efficiently and economically.

The "dope" is a mixture of equal parts of dextrine and plaster of paris to which is added enough shellac to make the preparation thin enough to apply with a brush.

After the mica and copper at the commutator's end are thoroughly cleaned, the "dope" is applied so that it completely covers the ends of the bars and the V-ring. After this has dried for twenty-four hours it is said

to be thoroughly set and absolutely impervious to any oil which would otherwise get into the commutator. When the "dope" is put on an armature which is later dipped and baked the baking process strengthens it.

The Pittsburgh Railways says this new dope is saving money both in reduction in the number of armatures having oil in the commutator end and in the cost of trying to prevent oil from seeping in. The company is "doping" about twenty-five commutators a day. J. H. Klein is the foreman of the armature winding department, where this "dope" was evolved and is applied.



CENTRIFUGAL SEPARATOR

Improved Centrifugal Separator

THE accompanying illustration shows a redesign of the Stratton separator, which is being placed on the market by the Griscom-Russel Company, New York. In the redesign of this separator the helical path has been lengthened in order to increase the centrifugal separating action. The manufacturers claim that this feature, together with the spatter cap on the outlet pipe, greatly increases the separating efficiency. This type of separator is used for the removal of water from both steam and air systems.

Turning Car Wheels in Small Lathe

THE mechanical department of the Union Street Railway, New Bedford, Mass., has succeeded in adapting a 28-in. Manning, Maxwell & Moore lathe to the turning of all its steel car wheels which run as high as 33 in. in diameter exclusive of flanges. The company was formerly obliged to send all wheels outside for turning, the larger ones being sent to Philadelphia. This involved not only the outside charges but also freight bills and delays incident to shipping by freight. The 28-in. lathe which was already in the shop was rugged enough to handle this class of work if the diameter limitation could be overcome.

To increase the swing of the lathe three iron castings were secured and machined to fit the track on the lathe bed and were placed respectively under the headstock, tailstock and center-rest, raising the three working parts of the machine to an additional height of 4½ in., so that now the 28-in. lathe will swing a 37-in. diameter.

The wheels are not removed from the axle, the whole unit being placed in the lathe, after the rough hard surface of the wheels has been removed in the grinder to save wear on the lathe tools. A pair of dogs are attached to the faceplate at opposite sides of the center and bolted to the "near" wheel, giving a steady uniform drive free from vibration and preventing eccentricity in cutting which might result if the wheel were driven from one side only. These dogs were made by bending 1-in. x 5-in. wrought-iron bars into U-shaped fittings with lugs at the tips.

Perforating Ties to Insure Complete Impregnation

A MACHINE for perforating ties before impregnation has been developed and installed at the plant of the St. Helen Creosoting Company, St. Helen, Ore. It was designed and built by Greenlee Brothers & Company of Rockford, Ill. On page 560 of the ELECTRIC RAILWAY JOURNAL for March 19 was described a machine for puncturing the butts of poles before treatment which operated by dropping chisel-shaped bars on the pole. The perforating machine used for ties operates on a different principle. The ties are subjected on all sides to the rolling action of four toothed drums, two rotating on vertical axes and two on horizontal. The teeth are so spaced that incisions are made both across and along the grain and so that those along the longitudinal axis of the ties form diagonal lines. The diameter of all the drums is 14½ in. The speed of the machine is 70 lin.ft. per minute and it handles ties up to a maximum size of 8 x 14 in.

The lower horizontal drum and the right-hand vertical drum, looking in the direction in which the ties are fed into the machine, are located rigidly and both are driven by gearings mounted upon the side of the machine arranged to receive its power from a 15-hp. motor. The top horizontal drum and left-hand vertical drum are flexibly and adjustably mounted for variations in the tie sizes, and are furthermore provided with flexible connections which will permit of a rocking or tilting position for perforating ties of more or less irregular form. In addition to the four principal drums there is provided a counterweighted or spring-actuated pressure roll, power driven from the same motor and adjustably hinged in the front of the horizontal drum as an aid to the operator in lining up the ties against the rear fence as they are inserted in the machine, thus assuring a straight and true feed.

The two adjustably mounted drums are fitted with heavy coil springs, provided with tension adjustments arranged to give the necessary force to the drums for properly performing their perforating functions. The maximum pressure provided for in these springs amounts to 25,000 lb.

Each drum contains twenty-five toothways, arranged to carry the teeth for perforating at approximately 2-in. distances lengthwise on the timber. The teeth are placed in these toothways with spacing blocks for 1¼-in. tooth centers. The teeth are of hardened, tempered tool steel, designed to project ⅜ in. from the surface of the drum. The face of the drum is in contact with the ties as they are passed through the machine, so that the teeth penetrate into the wood the full length of their projection from the surface of the drum.

The development of this method makes it possible to treat the tie with a minimum reduction in its natural strength and durability, so that its maximum mechanical life can be obtained. Hitherto deep penetration of preservatives into the wood has been obtained only at a sacrifice of from 30 to 40 per cent of the natural strength of the wood, due to the continued subjection to the treatment at a high temperature. Under this process lower temperatures and less time for treatment are required, so that there is a reduction of not more than 8 to 10 per cent of the strength of the timber in compression perpendicular to the grain. Thus a reduction in the present loss in strength and mechanical life of treated perforated ties reaches the point where the cost of treatment is justified.

Letters to the Editors

Maintenance Cost on a Car-Weight Basis

NEW YORK, April 18, 1921.

To the Editors:

In connection with the article entitled "Why Alter the Standard Safety Car Design?" by J. C. Thirlwall, which was published in the April 16 issue of the ELECTRIC RAILWAY JOURNAL, I find the analysis of maintenance cost as affected by car weights particularly interesting. The basis for arriving at the relative values, however, is not quite clear to me. As I understand it, the author says that at least one-fourth of the cost for maintenance of way and structures and fully one-half the cost of equipment maintenance are affected by the weight and size of the car body. If you have data available that will illustrate these deductions, I should be interested in obtaining them. "ENGINEER."

[EDITORS' NOTE—The above question was referred to Mr. Thirlwall and he has furnished the reply given below.]

SCHENECTADY, N. Y., April 20, 1921.

To the Editors:

I do not suppose any two men in the country will agree on the actual effect of car weights on average equipment maintenance or track maintenance. I arrived at my figures by some such line of thought as this:

From figures I have seen it appears that of the total maintenance of way and structures about two-thirds is the actual maintenance of the roadway; that is, the money spent on renewals of rail, special trackwork and ties and in tamping up weak joints. It is of course obvious that a considerable part of the deterioration of rail and of ties is caused by weather conditions rather than the weight that passes over them, but on the other hand it is equally certain that a large part of rail wear and practically all cases of loose joints can be attributed to weight. It is also certain that, theoretically, tie spacing can be proportioned to the weight carried on any given size of rail, and many roads have taken advantage of this fact to space ties much wider apart since the introduction of lightweight city and interurban cars than they had previously done.

I, therefore, estimate that of the 65 per cent of the total which goes into track maintenance about 40 per cent is caused by weight, or approximately 25 per cent of the total.

On equipment maintenance, I figured brakeshoe and wheel wear is directly proportional to the weight carried, compressor maintenance is very nearly proportional, the gearing wear and motor bearing wear are directly dependent upon the weights moved. With any given size motor the heating increases roughly as the square of the weights handled, and, in the particular case I had in mind, we believe the maximum safe capacity of the motors has been reached with the present weight of the standard safety car and that any material increase will tend considerably to reduce the life of the motor insulation. In other words, while the 25-hp. motor can handle considerably greater weights provided the schedule speeds and number of stops are moderate, we feel that when stops run to nine or ten per mile and the maximum speed possible under these conditions is used, 16,000 lb. dead weight is about all that the motors should be called upon to handle. The heavier the car the greater becomes the burning of control fingers and of circuit breaker tips, two doors with their mechanisms obviously require more repairs than one, a greater area of body requires more paint Balancing all these points together and comparing with the relatively small proportion that are unaffected by the size and weight of the body leads me to believe that at least half of the total maintenance is affected by the body weight.

Of course, as I said before, I do not expect that all equipment engineers will agree with my estimates, but there are probably as many who will raise them as there are who will reduce them. J. C. THIRLWALL.

National Standardization Movement Deserves Support

PUBLIC SERVICE RAILWAY

CAMDEN, N. J., April 21, 1921.

To the Editors:

I note the editorial on the annual report of the American Engineering Standards Committee and the synopsis of the report, in the last issue of the ELECTRIC RAILWAY JOURNAL. As you know, the writer has been deeply interested in national standardization from the beginning of the movement, first as one of the representatives of the American Society of Civil Engineers and at present also as representative of the American Electric Railway Association on the American Engineering Standards Committee.

It seems particularly fitting that the A. E. S. C. has just at this time established itself on a substantial footing to "Americanize" our standards. There seems to be a general cognizance of the great possibilities for this work for savings of the nation's resources and industry. This is particularly apparent from the interest that is being shown by such important national bodies as the United States Chamber of Commerce, the American Association of Manufacturers and the Department of Commerce of the United States under the able leadership of Secretary Hoover. There is no doubt that a wider use of standards would stabilize both labor and capital to a great extent. Standardization would allow stocking up in dull times.

The executive committee of the American Electric Railway Association, at its last meeting, instructed all of the standing committees carefully to go over the Engineering Manual and pick out all standards that in their judgment should be submitted to the A. E. S. C. for approval. These reports will be submitted to the standards committee of the American Electric Railway Engineering Association and if approved by the executive committee will be submitted with all pertinent facts to the A. E. S. C.

One thing the American Electric Railway Engineering Association has been trying to do in the past has been to induce a wider use of the standards that it now has and that have cost the association so much time and labor. Although it is almost a crime, in these days when we are trying to increase production at a reduced price, to change a recognized standard just for some personal whim, it is not uncommon for those who have authority to this end actually to do this very thing. Those who have carried on this expensive practice in the past without proper regard to the association stamp of approval will not be so prone to do so if the particular association standard has been "Americanized"

by the A. E. S. C. Besides, the manufacturers or selling companies would be in a better position to take exception to proposed changes in standard materials and specifications that would yield no apparent benefit.

It is hoped the members of the American Electric Railway Association will support the American Engineering Standards Committee to the limit and cooperate with it, which will be an action that will not only benefit a particular class, but the country and world as a whole.

MARTIN SCHREIBER,
Chairman Standards Committee,
American Electric Railway Engineering Association.

San Francisco Municipal Railway

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS
Bureau of Engineering

April 20, 1921.

To the Editors:

In your issue of April 9, page 697, under the caption "Municipal Railway Falling Behind," by tables of computed figures an effort is made to discredit the operations of the Municipal Railways of San Francisco.

A deadly parallel is used to accomplish this purpose and an analysis of the table at the bottom of the page will show how very unfair the arrangement of this table is. The mileage of the United Railroads is 244.24, or about four times that of the Municipal Railways. You charge up to Maintenance Account for our mileage $667,506 as against $972,808 for the United Railroads and endeavor to soft-pedal this discrimination by the footnote carrying the depreciation on the United Railroads as included in the two previous accounts of Way and Structures and Equipment. This, of course, is juggling with figures and a solution in which the city must decline to acquiesce.

Substantially, to date, since the city started this enterprise there was a capital investment of $5,826,552.47. Eight hundred and ninety-nine thousand three hundred dollars of this capital has been paid back as the installment bonds matured. One million one hundred and eighty-eight thousand one hundred and fifty dollars of the earnings have been invested in making extensions and betterments to the original 45 miles of line. Cash assets in our treasury amount to $1,266,832.01, or a net earning of very nearly $3,300,000, besides paying interest on all outstanding bonds, and all accomplished since the Municipal Railways started operating, and without increasing the fare beyond 5 cents and paying $5 for eight hours' work to the carmen.

If this activity can be classified as "falling behind" we are quite willing to fall by paying our debts as bonds mature and making necessary extensions out of our earnings, which are rapidly accumulating.

Strange as it may seem this Municipal Railway has been kept out of politics and conducted on clean business principles. It is a pronounced success and has the good wishes of all the citizens of San Francisco as well as the admiration of all officials and visitors from other cities who come to see our activities.

M. M. O'SHAUGHNESSY,
City Engineer.

[In the article referred to it was not the purpose to show the results of operation or the financial condition of either the Municipal Railway or the United Railroads over the entire period of time that the Municipal Railway has been in operation. The thought was to show only the results of operation of the two systems for the year ended June 30, 1920, which was done. No attempt either was made to show or analyze the balance sheets for the two operating companies.

With regard to the depreciation item for the United Railroads, subsequent information shows that the United Lines actually added to its depreciation reserve $550,000 from its profit and loss account for the year. This undoubtedly should be added to the figure of $972,808, to give a fair comparison between the two systems. This would change the total maintenance expenses per car-mile from 3.791 to 5.941 cents, the car-hour expenses from $0.334 to $0.523. The percentage of revenues and expenses would be 16.89 and 21.86 instead of 10.78 and 15.20 respectively; the other percentages in these columns would necessarily have to be changed accordingly.—EDITORS.]

Association News

Committee on Purchases and Stores Meets

ON APRIL 22 the committee on purchases and stores of the Engineering Association held its initial meeting at association headquarters. Among those in attendance were W. H. Staub, purchasing agent United Railways & Electric Company, Baltimore, Md., chairman; J. Fleming, Capital Traction Company, Washington, D. C., and W. H. Ford, Memphis (Tenn.) Street Railway. The committee discussed many matters in general pertaining to the purchase of materials and supplies, and agreed to collaborate with the committee on stores accounting of the Accountants' Association with the object of submitting a joint report covering general subjects of stores accounting. It is the idea of this committee to include consideration of a material classification applicable to electric railways, similar to the one recommended by the Railway Storekeepers' Association for steam road operation. The committee will also ask those interested in purchasing subjects to submit suggestions for presentation by papers and discussion in an open meeting. The committee asked that a purchases and stores department section be inaugurated in *Aera* question box.

National Electric Railway Day

THE idea of setting aside May 4 as National Electric Railway Day has met with none but favorable response. While some companies have said they could not stage a public demonstration such as a parade, all have said that the idea was to be commended and they would do whatever was possible to help in calling the attention of the developments in the electric railway industry to the public, through the display of advertising matter and local newspaper stories.

The attitude in general taken by the companies replying to President Gadsden's recent letter is reflected by such statements as "the plan has our most hearty approval and you can depend on us for a most liberal program," "we will with pleasure and enthusiasm join in the program," "we are very much interested in the program and will be pleased to get the publicity matter," "we approve of the enterprise and will give the movement our fullest support."

Among the companies that have signified their inten-

tion of participating either wholly or in part are the Connecticut Company; Charleston (S. C.) Consolidated Railway & Electric Company; Schuylkill Railway Company, Girardville, Pa.; the Shreveport (La.) Railway; Morris County (N. J.) Traction Company; Chicago, Ottawa & Peoria Railway; Springfield (Mo.) Traction Company; Eastern Pennsylvania Railways, Pottsville, Pa.; United Railways & Electric Company of Baltimore.

The New Orleans Railway & Light Company is to put on the entire program some time in June, as it could not complete its arrangements at an earlier date along the lines it desires. Efforts are being made to get the Virginia Railway & Power Company to operate if possible one of its first electric cars over the original route in Richmond.

The advertising section of the Association's Bureau of Information and Service, which has this matter in charge, has already sent a national story on the developments of the industry to all newspapers. Copies of the same story, supplemented by photographs of two old cars, for reproduction, have been sent to the electric railways. Wall cards showing the growth in car design, for display in waiting rooms and other points of congregation, as well as a leaflet for distribution have been prepared and sent to all operating companies in the country.

While only a limited supply of leaflets has been sent, the association is in a position to furnish additional copies for general distribution at actual cost upon request. These illustrated leaflets have a wide field for distribution as the pictures contained therein enable the companies to put over the idea easier than with non-illustrated reading matter.

Chamber of Commerce President Addresses Camden Section

THE regular monthly meeting of the Camden company section of the American Association was held at the Newton Avenue carhouse on April 21, with seventy-five members in attendance.

At the request of President Wallace, LeRoy A. Goodwin, president of the Chamber of Commerce, Gloucester City, and president of the Rotary Club, Camden, addressed the meeting, bringing out principally what a real organization can accomplish by co-operation. The speaker won the hearts of his hearers by making the statement that he personally was for well conducted trolley service, and positively was against the jitney business. He also suggested a loop system for Camden, whereby the citizens in new sections would have convenient transportation rather than having to walk a number of squares to the nearest car line.

In the general discussion which followed, improvement in the service was the chief topic. Some interesting matters were brought to light, chief among them being the smoking nuisance on trolley cars.

Mr. Schreiber wound up the evening talk by stating that the general public should be impartial in its judgment of the trolleys. Without such services in the various suburban towns these towns could not advance, and should a receivership for the Public Service Railway become necessary, patrons would be obliged to pay additional fares to travel to the very communities that are now covered by single fares. Mr. Schreiber also read numerous letters that he had received complimenting the railway on its good service.

Commerce Chamber Meets

THERE was a large attendance at the meetings of the United States Chamber of Commerce, held at Atlantic City this week. The first general session was on Wednesday morning. This was followed by similar sessions on Thursday morning and Friday morning and afternoon, with group meetings on the afternoons of Wednesday and Thursday. Two special topics considered by each group were taxation and tariff.

The situation of the public utilities was considered in a paper by Edward N. Hurley of Chicago, entitled "The Arrested Development of Public Utilities," scheduled for presentation at the general session on Friday morning. The report of the directors of the organization on the work of the past year also contained a reference to Referendum No. 33 on electric railways, submitted Nov. 19, 1920, with the vote recorded on each of the eight propositions presented to the membership. The report of the committee on railroads, presented before the Transportation and Communications Group, was devoted to the trunk line railroad question and did not recommend additional legislation on the railroad question at the present time. Instead, it expressed the opinion that there should be further experience under the transportation act of 1920.

Connecticut Section A. I. E. E. Organized

THE thirty-second local section of the American Institute of Electrical Engineers was formally organized at New Haven, Conn., on April 22. It will be known as the Connecticut Section. The section will include all of Connecticut, with the possible exception of the corners of the State now within the radius of the New York, Pittsfield and Providence Sections and will have meetings at various points in the state.

The principal speaker at the organization dinner was Dr. William McClellan, leading candidate for the institute presidency for the coming year. He made a plea for the recognition by the section of its duty to develop a broad engineering atmosphere as well as to discuss technical engineering problems.

Charles F. Scott, professor of electrical engineering Yale University, was elected chairman of the section, and A. E. Knowlton, electrical engineer Public Utilities Commission of Connecticut and instructor in electrical engineering Yale University, secretary-treasurer.

French Electrification Progress

THE French Commission in the United States has recently issued a statement regarding progress which is being made in adapting electric motive power to heavy railroading in France. Electrification of more than 1,800 miles of track is under way, orders having been placed for fifty new electric locomotives of a type somewhat similar to that used by the Milwaukee Railway in this country. Two hydro-electric plants are being reconstructed, each to furnish 150,000 hp. to this railway, and this work is nearly complete.

The Orleans Company and the Paris-Lyons-Mediterranean Railway are planning to electrify about the same length of track. Electric power for the former will be furnished by the waterfalls of the Upper Dordogne River, while that for the "P. L. M." will come from the falls in the French Alps. The cost of electrifying all of these roads will be at least 5,000,000,000 francs and electrification is expected to save more than 3,000,000 tons of coal per annum.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

Wage Cut Rejected

Arbitration May, However, Be Resorted to in Detroit Controversy—Men Name Representative

The proposed reduction of wages suggested by the Detroit (Mich.) United Railway to become effective on May 1 has been rejected by the men. No agreement has been reached relative to arbitration. The men have, however, asked for a conference with officers of the company, with a view to discussing and considering the situation in the hope of being able to reach an understanding on the agreement covering wages and working conditions or to arrange to submit the questions to arbitration if an understanding could not be reached. A resolution passed by the men in mass meeting requested that the old contract be continued, with the wages and working conditions unchanged.

It was further resolved that should the joint committee and the officials of the company fail to reach a satisfactory settlement before May 1, 1921, the company should be notified that an arbitrary reduction in wages and change in working conditions will not be accepted.

A conference between the representatives of the union and company officials did not bring any definite results. While the company is willing to consider arbitrating the entire agreement with employees, arbitration of the wage question alone is not looked upon with favor by the company.

In a letter sent to Frank W. Brooks, president of the company, the joint committee states that there appears to be either an oversight or misunderstanding on the part of the company as to the time the present wage went into effect. While the company officials seem to be under the impression that the present wage went into effect on May 1, 1920, the men contend that the present rate did not go into effect until May 16, 1920, and that it was to be for one year.

As a basis of settlement for wages and other questions in dispute as submitted in the company's proposed agreement the committee makes the following proposition:

That these questions should be submitted to a board of arbitration of three persons as the agreement provides and the decision of a majority of the board of arbitration to be final and binding upon both parties.

That the present wage rate and working condition continue in effect until the board of arbitrators have made their award.

That should the time of the board of arbitration extend beyond May 16 the arbitration board be empowered to say whether any decrease or increase which they may award shall be retroactive.

That should there be an increase the company is to pay the same from May 16, 1921; if there be a decrease the decrease is to be taken from the wage of the employee from May 16, 1921, and in order to assure the company against any loss in case where an employee might leave the service of the company before the company had the opportunity to deduct any decrease the organization will place in the hands of the Peoples State Bank of Detroit, Mich., the sum of $50,000 to meet any such shortage.

For the purpose of completing and getting the arbitration board into operation the committee has named Frank D. Eaman as arbitrator for the men.

Following the conference with the men President Brooks issued a statement in which it was cited that representatives of the employees had been advised of the financial inability of the company to continue the present wartime wages on the existing rates of fare and that the necessity had been made clear for a wage readjustment on May 1 to meet existing conditions.

As to the matter of arbitration Mr. Brooks explained that the company now, as always, stood ready to submit all differences to the judgment and decision of such a board, and that if the offer the company has made is not acceptable then the company is willing to submit the entire agreement to a board of arbitration and pending the decision the rates of pay and working conditions offered by the company are to be put into effect on May 1, in accordance with the notice to the men.

Cost-Plus System Favored

The Fort Wayne Federation of Labor has expressed a preference for the cost-plus system of determining fares for the city lines in Fort Wayne and a resolution setting forth the federation's position in the matter has been presented to the City Council, as follows:

The federation's committee appointed to investigate the railway situation has decided to ask the federation to endorse the cost-plus plan of railway operation and to ask the City Council to appoint a committee to confer with this committee to study the possibility of installing such a plan in Fort Wayne.

Your committee is well aware that the company is entitled to a fair and just return on the money actually invested and no more. On the other hand, the citizens are entitled to a first-class service at as low a cost as is possible. We believe that the cost-plus plan if properly installed will meet the purposes.

In his statement giving the reasons for asking for a rehearing the city attorney alludes to the matter of maintenance.

"The city of Fort Wayne is desirous that proper service be maintained, but it believes it unjust to do an abnormal amount of maintenance work, rebuilding of lines and such in a very short time, thus taxing the present car riders more than their just burden to satisfy the desire of the present operator to get his Fort Wayne lines in the very best possible condition at the earliest possible moment."

Investigation in Boston

Outside Influence Shown to Be Negligible in Effecting Passage of Public Control Acts

The investigating committee of the Massachusetts Legislature, recently appointed to look into charges of irregularities alleged to have existed in connection with the passage of street railway legislation in 1918 and 1919, has been engaged in questioning the men who were members of the two houses during those years. The committee has appointed George S. Taft, former district attorney of Worcester County, to act as counsel. The committee itself consists of five members of the present Legislature, none of whom was connected with that body in 1918.

At present all testimony is voluntary, each former legislator being called upon to waive his immunity rights before testifying. All witnesses are duly sworn before giving testimony. Only two have so far refused to testify voluntarily.

Governor Cox a Witness

Among those who have appeared before the committee is Channing H. Cox, now Governor of the State. Governor Cox was a prominent member of the 1918 Legislature, being speaker of the House of Representatives at that time. He upheld the street railway relief legislation as it was enacted at that time, and had no apologies to offer for it. He testified that he knew of no irregularities or improper influences exerted on legislators in behalf of the street railway bills.

There is some indication that an attempt will be made to invite Vice-President Calvin Coolidge, former Governor of Massachusetts, to come before the committee.

Several members of the former Legislature have admitted having purchased stock of the Boston Elevated and Massachusetts Electric companies, anticipating a probable rise in market value of those securities upon the passage of the public control and other favorable legislation. The ranks of the speculators included some legislators who opposed the bills and voted against them. In general they maintain that they believed they had a perfect right as individuals to do so, claiming their votes were not influenced thereby.

Each witness is first asked a series of specific questions designed to bring out whether or not any improper influence was brought to bear on him or whether any inducement was offered to secure votes in favor of the legislation. Each witness is also asked whether he bought any securities of the street rail-

ways involved, either directly themselves, or indirectly through others.

Although a few above mentioned admitted having speculated in the stock, all have denied any improper influence or inducement. Some have claimed that strong political pressure was brought to bear, and one or two have mentioned "corridor gossip" involving the possible financial advantage to be gained by speculating in the stock, but no specific names or concrete facts have been given of any irregular influences.

Following the standard interrogatories of counsel, each man is given an opportunity to make any informal statement he may desire. A number have taken the opportunity to praise the legislation, especially the Boston Elevated public control act, and have classed it as one of the most popular and cleanest pieces of corporation legislation ever passed.

The Boston daily papers, with the exception of the newly-established *Boston Telegram*, do not seem to take the present investigation very seriously. While fully reporting it in the news columns, very little editorial comment has been aroused. The Boston papers were unanimously in favor of the public control act in 1918.

Some little resentment has been aroused in banking and financial circles because of the action of the committee in sending an auditor to examine into their books and records of customers' transactions.

The committee's counsel, Mr. Taft, has given as his opinion that the Boston Elevated public control act is in the nature of a contract between the State and the Elevated Railway stockholders, and has hinted that legislators who owned stock and voted on the legislation relating to this alleged contract are liable to prosecution under the laws of the Commonwealth.

New Franchise in Effect

Details Are Reviewed of Outstanding Provisions of New Service-at-Cost Grant at Findlay

The new service-at-cost franchise for the city lines of the Toledo, Bowling Green & Southern Traction Company at Findlay, Ohio, went into effect on March 17. Fares are now 8 cents. C. E. Hart, D. Fortflowers, and M. D. Neff have been named by the City Council as the members of the first street railway commission. They will have power under the ordinance to regulate the service and determine when fare increases or decreases shall take effect under the new plan. The service and safety director of the city has since been named street railway director.

THE new service-at-cost franchise accepted on Feb. 14 by the Toledo, Bowling Green & Southern Traction Company modifies the twenty-five-year franchise in Findlay granted on Feb. 23, 1915. The franchise contains a number of interesting features.

One of these covers the appointment of the Commission of Control. This body is to consist of three members, each elected for a term of three years. The commissioners serve without pay. The Mayor transmits to the Council a list containing twice as many names as places to be filled, and from this list the Council fills the vacancies. The control of the service is in the hands of this commission except that it is not permitted to make "such requirements as will prevent the production of sufficient revenue to maintain the stablizing account."

Moreover, the commissioners have no control over temporary or emergency measures that may be taken by the company, and they work through the present city official known as the director of public service, who receives no extra compensation for the added responsibility but can employ necessary assistants at the expense of the railway.

Section 5 provides that the "traction company," which includes the interurban lines, shall pay 0.45 cents per ton car mile to the city street railway for the use of the track by the interurban passenger and freight motor cars and trailers in addition to a power charge.

Funds derived from the sale of property and not applied to the payment or retirement of outstanding bond issues may be used for extensions, betterments of permanent railway improvements, provided it is so agreed by the traction company, the trustee for the bondholders and the commission, but no additions are to be made to capital value for extensions, improvements and betterments so required. These funds may also be used for the renewal of existing equipment or property. If funds received from such a sale are not used for improvements of the property the capital value of the city street railway is to be reduced proportionately.

Section 10 provides that the value of the physical property of the city railway be set at $180,000 and on this amount the company is permitted a return of 7 per cent.

Section 11 provides for the stabilizing account which is to be $20,000, less prepaid accounts on the books of the city street railway, and this sum is recognized as part of the capitalization of the city street railway.

Section 12 provides that the traction company shall receive an allowance of 15 cents per car mile for operating expenses such as power, insurance, payment of claims, overhead expenses proportionate to the service, etc. The operating allowance is also to include not more than $400 a month to the traction company for joint services such as executive salaries and rental expense. These joint charges are not to be in excess of 12 per cent of the total operating allowance for any one month.

Section 13 provides for an additional allowance of 3½ cents per car mile exclusive of the car miles traveled by work cars for maintenance, which will be used exclusively for the upkeep of the city street railway property. In addition there is an allowance of 3 per cent of the capital value of the property (less land value and stabilizing account) for renewal and depreciation allowance. Such allowance cannot be used to make improvements which can be capitalized.

There is a sliding scale of fares, beginning at 8 cents cash, fourteen tickets for a dollar, or seven tickets for 50 cents. Increases or decreases are made according to regular schedule when the $20,000 stabilizing fund reaches $25,000 or drops to $15,000.

In case the traction company fails to carry out the conditions of the franchise after thirty days' written notice the commission can take over the street railway property and operate it until the traction company complies with the terms of the ordinance. During the time the city operates the railway all net income after paying current operating and maintenance charges are to be credited to the stabilizing account.

City Attacks New Law

An order was obtained on April 25 by the City of New York in the Supreme Court for the new Transit Commissioners of New York to show cause why they should not be restrained from entering upon their new duties and that the present Transit Construction Commissioner should show why he should not be restrained from turning over to the new body the records of the commissioner's office. The new commission in New York City has since taken charge over the protest of Rapid Transit Construction Commissioner Delaney.

Jitney Operators Arrested

The police of Albany, N. Y., under the direction of Public Safety Commissioner Frost, on April 22, started making wholesale arrests of jitney bus operators. All of those arraigned demanded jury trials, were admitted to bail and in many instances resumed operation of their cars.

The situation is a peculiar one in that Mayor Watt has recently been served with an injunction restraining the operation of jitneys in competition with the United Traction Company's cars and has made an appeal on the injunction. Corporation Counsel McManus holds the Mayor without authority to stop jitney service pending the result of the appeal, but the Commissioner of Public Safety has gone over the Mayor's head in the exercise of the police power to stop the service.

In spite of the fact the railway states the strike of its trainmen is broken Justice Hinman of the Supreme Court

on April 21 ruled that the ban against picketing by former employees of the United Traction Company be continued.

For the first time since the strike began twelve weeks ago service was resumed by the United Traction Company in Rensselaer on April 22.

Interurban Announces Wage Cut

Wages of motormen and conductors employed by the Cleveland, Columbus & Southwestern Railway, an interurban road that taps territory southwest of Cleveland, are to be reduced on May 1, officials of the company have just announced.

The exact amount of the reduction has not been definitely determined but officials have stated that the financial conditions of the road makes it necessary to reduce the wages of the trainmen at least 20 per cent. This is the amount of the reduction accepted by the local Cleveland trainmen.

The wages paid by the Cleveland, Columbus & Southwestern Railway now are 55 cents an hour for first three months; 58 cents an hour for the next nine months and 60 cents an hour for all men in the service longer than one year. It is likely that the highest rate the men will receive after May 1 will be 48 cents an hour.

Changes in Proposed Florida Bill

With ten Florida cities represented by their mayor or some other high official protesting vigorously and presenting protests from fifty other communities the Railroad Commission has decided it will not press its bill for the creating of a Florida public utilities commission in its present form and that the clause giving the proposed commission control over municipally owned public utilities will be stricken from the proposed measure. The announcement was made by the commission's chairman, R. Hudson Burr, after a hearing of one hour on the bill by the Senate committee to which it had been referred by the Senate now in session at Tallahassee, Fla.

The proposed bill would create a public utilities commission to take over the duties of the present Railroad Commission and to take control of all public utilities such as electric, gas, water plants, etc. It was drawn by the Railroad Commission, presented by its attorney, who is a state Senator, and was referred to a committee of which the attorney was a member. This series of circumstances has heightened the hue and cry against the measure.

Peter O. Knight, general counsel for Stone & Webster in the Florida district, has expressed himself as follows:

I have become convinced that regulation of public utilities has come to stay. I know when I'm licked; and if we have to have regulation the companies I represent want intelligent regulation by an efficient body that can demand and enforce its demands. We do not want picayunish political regulation as inconsistent as the wind of hot-air politicians. We want what we are entitled to and that's all. I am not particularly in favor of this bill but I am not fighting it. We are willing to accept it as preferable to political regulation, that's all.

$1,700,000 for Rapid Transit Changes in Queens

The problem of how to operate trains of the Interborough Rapid Transit Company and Brooklyn Rapid Transit Company with cars of different width over the same tracks in Queens Borough, New York City, has been solved by Transit Construction Commissioner John H. Delaney. Double rails will be laid, the Interborough using those already placed and the Brooklyn Rapid Transit trains to use those to be laid immediately. The double rails will make necessary some minor changes in equipment.

The tracks were laid by the Interborough Company, which uses cars about 12 in. narrower than those of the Brooklyn Rapid Transit Company. The Interborough refused to spend money to make changes for the accommodation of a rival, even though the contract called for dual operation. Commissioner Delaney ordered the company to make the changes and the courts were appealed to. The litigation resulted in a victory for the Interborough. Mr. Delaney on April 9 said that 16 miles of single track would be affected, and he estimated the cost of track changes at $800,000. Independent signaling and third-rail service will cost $300,000 more, and the cost of structural changes at the various stations on the new line in Queens is estimated at $600,000.

Commission's Powers Widened

Authority of Minnesota Body Extended to Electric Railway Rates, but Cities Control Service

General satisfaction exists in cities in Minnesota that have electric railways over the final passage of the amended street railway bill by the Minnesota Legislature and its signature by Governor J. A. O. Preus. The bill passed the House on April 13 by a vote of sixty-nine to fifty-seven. The amended bill passed the Senate on April 14, when the body concurred in the House amendments. It was signed by the Governor on April 16.

UNDER the new law rate control is vested in the State Railroad & Warehouse Commission with jurisdiction to the cities over routings and extensions. The commission is authorized to establish an emergency increase before a revaluation can be made and a permanent rate established.

The law settles the status of franchises soon to expire in the various cities by providing for the new indeterminate franchise method. The measure is on this account expected to stabilize business and to assist the companies in arranging new financing.

Not the least of the benefits will be to remove the question of fares from city councils and place it in the hands of a commission which is expert in the matter of rates and of valuations. However, the right of the cities to appeal to the courts under proper circumstances is reserved, as well as all local matters pertaining to new lines, etc., thus leaving intact the cities' home rule.

The railway lines in both Minneapolis and St. Paul are operating at a 6-cent fare. In Minneapolis the Twin City Rapid Transit Company already had authority to increase the fare to 7 cents, and in St. Paul to 7 cents after the Council had determined whether the railway has established service previously agreed upon as being necessary.

A summary of the provisions of the bill follows:

Section 1. Defines terms used in the bill.

Section 2. Provides that existing grants to street railways of the state and those made in the future shall be indeterminate permits—permits to do business until purchase of the property by the city or until termination or modification of these permits by the legislature. Acceptance of the indeterminate grant by companies now operating is optional, however. All terms, conditions and obligations of existing franchises are continued in force except as otherwise provided in the bill.

Section 3. Provides for purchase of the company's property by the city at a valuation fixed by the commission, whose decision in the matter is subject to appeal to the District Court of the county in which the company operates. This property may, moreover, be acquired by condemnation proceedings, or by agreement.

Section 4. Perpetuates the right of the cities to say what manner of service the street railways must furnish. This authority is made final and is not subject to appeal by the street railway.

Section 5. Grants the Railroad and Warehouse Commission authority to fix reasonable rates of fare, subject to appeal to the District Court of the county in which the company operates.

Section 6. Provides more particularly for continuous intercity passenger service, having in mind more particularly the peculiar situation which exists because of the physical proximity of Minneapolis and St. Paul.

Section 7. Provides that the company must obtain authority of the commission before it can issue stocks, bonds or other evidences of indebtedness payable at periods of more than one year, and further provides that the street railway shall not issue evidences of indebtedness when their value, together with other outstanding securities exceeds the fair value of the property. This makes watered stock impossible.

Section 8. Gives the commission authority to establish rates of fare, either on its own initiative or on the application of either the city or the street railway, and provides that such rate shall be based on a valuation of the street railway's property. This section further provides that the commission shall have access at all times to the records and accounts of the street railways.

Section 9. Authorizes the commission to determine and fix the fair value of the street railway if the petition of the city be filed with the intention of acquiring such property. If the petition be to fix a rate of fare, the commission is to allow a rate which will yield only a reasonable return on the fair value of the property.

Section 10. Provides that the city or street railway may appeal to the District Court of the county in which the street railway operates from any ruling of the commission, and that the court shall try the case *de novo*, taking into consideration any evidence offered, whether excluded by the commission or not. An appeal from the decision of the District Court may be taken to the Supreme Court.

Section 11. Provides for use of city lines by suburban railway. The compensation to be paid is to be fixed by mutual agreement if possible, subject to the approval of the Council, but in the event of the failure to agree the Council is to fix the compensation, subject to appeal to the District Court.

Section 12. Declares that no grant shall be issued to a street railway to operate in a city in which another street railway is then operating unless a certificate of convenience and necessity is first obtained from the commission after a hearing.

Section 13. Vests in the commission the authority to prescribe a system of accounting, prescribe depreciation, and control the disposition of money in the depreciation fund. This section compels the company to furnish the commission annually full financial reports, and any additional reports that the commission may request.

Section 14. Reserves to the state the right to modify, amend or repeal the act, or to cancel or modify any indeterminate permit. It prohibits the granting of an indeterminate permit to other than a Minnesota corporation.

Section 15. Repeals all legislation conflicting with the provisions of the act.

Section 16. Makes the act effective from and after its passage.

Formal acceptance of the provisions of the new law was sanctioned by the directors of the Twin City Rapid Transit Company on April 22. President Horace Lowry said:

The board decided to accept the indeterminate permit as provided by the law, and to work under the new act. As to the service in the Twin Cities there will be no immediate effect except that we will continue our efforts to improve the service. Details of changes will have to be worked out.

In commenting on the act when it passed Mr. Lowry said:

I am glad the Legislature has seen fit to pass a law which will strengthen the credit of street railways and will, I hope, enable our companies to obtain the funds necessary to build up and expand our system of transportation to meet the needs of these growing cities and the surrounding country.

The public, however, must realize that under the act it will take the commission some little time to determine the fair value of the property and that this must be done before we can ask the investing public to lend us the money we need to do even the work and paving now ordered.

The company, through its officers, during the discussion of the bill pledged itself to do its best to go forward in the public interest. The passage of this act increases the responsibility of the company to the car riding public, and at this time I wish to assure our patrons that we propose to the best of our ability in letter and spirit to live up to all that we have promised.

The exact date for filing of declarations with the city clerk is not determined. The certificates which the clerks will issue, when filed with the Secretary of State, place the companies under the indeterminate franchises provided for in the new law.

Strike Likely on Eastern Massachusetts Street Railway

Unless some unexpected eleventh hour development occurs to change their plans, the employees of the Eastern Massachusetts Street Railway are expected to go on strike on May 2. According to figures given out by the union officials, the men voted overwhelmingly against accepting either of the alternative propositions offered by the public trustees. The latter on Feb. 25 announced a 20 per cent reduction in wages, effective May 2, the union contract expiring May 1, and since then, as an alternative, have offered to arbitrate the wage question, but only on condition that an open shop policy will be followed. Neither of these was acceptable to the union.

The men are demanding arbitration on the basis of possible changes in the existing agreement. The trustees, however, in their original notice to the employees, signified their intention to cancel in its entirety the present union agreement at its expiration, May 1.

The trustees have announced that they intend to operate the road whether or not the present employees quit.

The trustees have sent announcements to the public officials and the newspapers in the various cities and towns that their intentions in reducing wages are solely along the lines of making reductions in car fares, and that the company does not expect to profit by lower wages.

Advantageous Advertising Contract

United Railways, St. Louis, Will Increase Revenue 300 per Cent Under New Arrangement

In letting a contract to the Western Advertising Company for space on and in the cars of the United Railways, St. Louis, Mo., beginning on Oct. 1, 1921, Rolla Wells, receiver, has included the dashboard space which heretofore has been reserved by the railway for civic and charity purposes, or used to stimulate travel. This increased space was a factor in the 300 per cent increase in revenue the company will gain from the new advertising contract.

$191,300 FOR TEN YEARS

The contract is for ten years at $191,300 a year. When the receiver took charge two years ago, the company was receiving $64,000 annually for advertising space. Last year this sum was raised to $80,000, under a temporary settlement effected in the United States Circuit Court. Last month, by order of the court, new bids were called for and they were opened a few days ago. There were four bids, and the minimum under the new allotment of space including dashboards was $150,000.

Separate bids for inside and outside the cars were not called for, and therefore no indication was given as to how much the bidders considered the dashboard space to be worth—two dashboards on the fronts of all the 1,500 cars operated by the company. The periods of time called for were five and ten years, and it was found that the Western Advertising Company, the highest bidder, offered $10,000 a year more for a ten-year contract than a five-year contract. The receiver accepted the ten-year agreement, $191,300 annually, and it is expected the Federal Court will approve it.

RAILWAY RESERVED LITTLE SPACE

The only space reserved by the company for its own purposes is the light-box sign space, and on the glass of the windows when the windows are closed. The company's publicity will take some other form, and Col. A. T. Perkins, manager for the receiver, is now considering the publication and distribution of folders for car riders. It is figured that 500,000 folders can be printed and distributed every month for about 4 per cent of the increased revenue the company gets for the advertising space.

Wage Cut Demanded

Railway at Youngstown Insists Upon 25 per Cent Reduction and Changes in Working Conditions

G. T. Seely, vice-president and general manager of the Pennsylvania-Ohio Electric Company and president of the Youngstown Municipal Railway, has transmitted to the trainmen in the employ of these companies a draft of a new agreement for the ensuing year embodying a wage scale of 45 cents an hour for the first three months, 48 cents for the next nine months and 50 cents an hour thereafter, with 5 cents an hour additional for operators of one-man cars.

The present contract governing the wages and working conditions of the trainmen has been in force since April 1, 1920. It expires May 31, 1921.

TWENTY-FIVE PER CENT REDUCTION

The rates of wage paid under this contract are 60 cents an hour for the first three months of employment, 63 cents an hour for the next nine months and 68 cents an hour thereafter, and 5 cents an hour additional for operators of safety cars. By far the largest number of men come under the higher classifications. The rates of wage in the last previous contract were 43 cents an hour for the first three months, 46 cents an hour for the next nine months and 48 cents an hour thereafter. The rates in the present contract are more than 40 per cent above those specified in the last previous contract and 120 per cent greater than the rates of wage paid in 1914 prior to the beginning of the world war.

Mr. Seely explains to the men that after a year's experience with the present scale, it has been conclusively demonstrated that this rate of wage cannot be continued as the earnings are not sufficient properly to maintain the property or provide any return on the investment. Mr. Seely says that the only excuse for such an intolerable condition being permitted to exist temporarily was the excessively high cost of living in effect in April, 1920, when the last contract was negotiated. In this connection he says:

Now that the cost of living has materially declined, this temporary situation no longer exists and the public interest requires an adjustment; and I am, therefore, taking this opportunity to inform you that this company cannot continue the present wage agreement beyond the date fixed therein, May 31, 1921, and that any new wage agreement must of necessity be much lower than the present wage in all rates.

At the same time Mr. Seely has explained that some of the working conditions under the present contract are a survival of years when different operating conditions existed and are of such a nature as to interfere with efficient operation. He says that the conditions which should be modified or eliminated are those—

1. Requiring and enforcing absolute closed shop and interfering with free selection of men.
2. Requiring all runs to be early and late—a situation which renders operation costly and inefficient.
3. Requiring unnecessary expenditures

for pilots to accompany crews already familiar with road.

4. Requiring higher rates of wages for certain work that would be largely sought by trainmen at standard rates.

5. Requiring excessive penalty payments for overtime.

6. Prohibiting operation of safety cars on lines on which special agreement has been made, thus tending to limit the company in providing adequate service to the public.

Cars Reflect Europe's Devastation

A recent traveler through after-the-war Europe has brought back to this country harrowing tales of the electric railway industry in Budapest. He says:

As for the street cars, I never saw such woe-begone specimens as those of Budapest. They used to be brown or yellow, but now nearly every one of them is a nondescrpt blackish-gray, a color without a name. Their wheels and the rest of their machinery are so rusty that the poor cars wheeze and creak and groan as if they were about to fall to pieces any minute. Their windows won't work; the platform steps sag when one puts a foot on them. As these faded imitations of trolley cars jolt along Budapest's dirty thoroughfares they seem like mangy street curs sneaking along the gutters in search of a bone.

Some Contemporaries of the Five-Cent Fare

Nelson, Cook & Company, Baltimore, Md., in their market letter of April, comment upon the agitation for a restoration of the 5-cent fare in that city. They say:

Now is not the time to restore the old 5-cent fare, nor would it be feasible for the city of Baltimore even if the proposition were considered a good one, to take advantage of the old agreement contained in the original franchises whereby the city has the privilege at given periods of purchasing the old City Passenger Railway lines. The return of the 5-cent carfare will be contemporaneous with the return of the 1-cent newspaper, the $4 a day mechanic, the $10 a week stenographer, and similar quotations of a former day.

News Notes

Carmen Suggest Wage Cut.—The manager of the Altoona & Logan Valley Electric Railway, Altoona, Pa., has been notified that the employees will voluntarily accept a wage reduction of 5 cents an hour beginning May 1. The scale has been 55, 57½ and 60 cents, according to length of service.

Wage Offer Rejected.—Employees of the Des Moines (Ia.) City Railway, by an overwhelming vote, have rejected the proposition submited by the company which placed the maximum wage at 60 cents. The present working agreement between the men and the company expired on March 1. If an agreement cannot be reached the wage question will be submitted to arbitration.

Plans Study of Trackless Trolley.—An investigation of the feasibility of installing the trackless trolley in Cincinnati, Ohio, was started by William C. Culkins, formerly director of street railways. Mr. Culkins said that the trackless trolley might be very useful and successful in parts of the city where extensions of the railway are really needed but where the expense of installing such railway extensions would be prohibitive.

Sioux City Men Face Wage Cut.—Sufficient revenue has not been obtained by Sioux City (Ia.) Service Company from fare granted last year to maintain the present wage scale and a readjustment has been asked. The men were granted an increase last year, making the hourly scale 50 to 60 cents with 7 cents additional per hour for operating one-man cars. It is intimated that a 10 per cent reduction will be asked.

Safety and Courtesy Win Merit.—To place special emphasis on safety and courtesy the Los Angeles (Cal.) Railway has announced a slight change in the merit system, under which credits are computed for the Christmas cash bonus. The 25 credits formerly given for a clear record for one month will be discontinued and instead, regardless of the number of demerits which a man has received for other reasons, ten credits will be given monthly to each man who maintains a clear courtesy record for one month and ten credits to each man who maintains a clear safety record for each month.

Municipalization Urged.—A large delegation from Niagara Falls, St. Catharines and other surrounding municipalities waited on J. D. Reid, Minister of Railways and Canals in the Dominion Government, recently to request the Government to acceede to the immediate purchase of the Niagara, St. Catharines & Toronto Railway by the Niagara Radial Railway Union. In reply Dr. Reid stated that it was impossible to take any action pending the report of the Royal (Sutherland) Commission appointed by the Ontario Government and which is now investigating the whole question of Hydro Radials within the province of Ontario.

No Progress Made on Toledo Agreement.—The possibility of a strike of trainmen of the Toledo Railways & Light Company, Toledo, Ohio, has been hinted by the union men, who are now working without any contract covering working conditions or wages. At the expiration of the contract nearly a month ago negotiations were begun looking toward a new agreement but no progress has been made. The company proposed a slight reduction in wages, but the men turned the contract down and have not made any compromise offer. In view of the deficits in the operation of the Community Traction system it is almost a certainty that the street railway commissioner will ask for a reduction of wages as an effort to forestall an advance in fares in August.

Nine-Cent Wage Increase Asked.—Employees of the Syracuse & Suburban Railroad, Syracuse, N. Y., which since its resumption a month ago has been operating one-man cars, have taken the initiative with respect to a contract to replace the present agreement, which expires on May 1. They have submitted a new contract calling for a wage increase from 56 cents an hour, the present scale, to 65 cents, basing their demand on the increased difficulty of operation of the one-man cars. The present contract was negotiated last May as the result of a strike. After the road suspended operation on Jan. 1 of this year General Manager Allen declared that the shut-down canceled the contract, and if the road resumed it would pay the men only 42 cents an hour, a reduction of 25 per cent. It was later decided to continue the scale in effect for two-man cars to the one-man car operators until the expiration of the contract.

Glasgow Against Underground Lines.—In reference to the great congestion of street traffic in the center of Glasgow, James Dalrymple, general manager of tramways, reported early in March to a committee of the Town Council against the construction of elevated or underground electric railways on account of the enormous capital cost and because the traffic would not yield sufficient revenue to meet the working expenses. What was needed, he said, was two additional bridges across the Clyde. The committee is recommending the construction of one of the proposed bridges with tramways on it, half the cost to be paid by the tramway department. The bridge and the necessary land are estimated to cost £840,000. For linking together outlying districts, where the present cost of tramway construction would be too high, Mr. Dalrymple favored the trackless trolley system of cars which could be worked much more cheaply than petrol motor omnibuses.

Objection Raised to Norfolk Grant.—At a recent public hearing before the City Council of Norfolk, Va., Tazewell Taylor, retained as special counsel by the Retail Merchants' Association in connection with the proposed new railway franchise for the Virginia Railway & Power Company, sharply criticised the franchise draft largely the work of A. Merritt Taylor, Philadelphia. He also entered objections to the provision for a utility board and for an 8 per cent return through a thirty-year franchise. He further attacked the idea of the city's pledging itself to renew the franchise or buy the property at the end of thirty years. Mr. Taylor believed that an examination of the company's books by the city would enable the city to fix a fare that would give a "just and fair return on the actual investment." The Norfolk Chamber of Commerce has retained Delos F. Wilcox, New York, as its adviser. A report by him on the pending franchise is expected within a few weeks.

Meeting of Association

New York Electric Railway Association

The thirty-ninth annual meeting of the New York Electric Railway Association will be held at the Fort William Henry Hotel, Lake George, N. Y., on Saturday, June 11.

Financial and Corporate

Call for Columbus Briefs

Special Master Hearing Charges of Mismanagement Expected to Report Soon

After months of intermittent hearings attorneys for the Columbus Railway, Power & Light Company, Columbus, Ohio, and for E. W. Clark & Company, Philadelphia, respectively, have closed their arguments and the master commissioner who has been hearing the testimony has asked for the filing of briefs by both sides in the controversy between the two interests.

The litigation arose through the filing of the Slaymaker receivership suit many months ago, brought by a stockholder to compel an accounting and if possible precipitate a receivership. Into this situation attorneys for the Columbus Railway, Power & Light Company injected evidence tending to place the blame for the alleged mismanagement of the company on the Clark interests, engineering and financial agents for the railway for years.

Charges were made at the hearings that the Clark company realized a large profit for handling the bonds and notes of the Columbus company, while at the same time it was receiving fees for acting as its agent. An analysis of the Clark company's records was introduced by the rail-light attorneys covering various transactions. In one instance alone, that of Feb. 1, 1916, it was sought to show E. W. Clark & Company received from the rail-light company $3,500,000 in bonds, at 90 per cent of par, or $3,150,000, and that the Clark company within ten days made a profit of $82,557 on the bonds.

This record, attorneys for the company contend, bears out the charge made by Charles L. Kurtz, president of the company, that at the time the bonds were disposed of a much better price than 90 could have been secured by the company. One million dollars of bonds issued on May 3, 1917, are alleged to have gone through a somewhat similar procedure, despite objections raised by Mr. Kurtz, then merely a stockholder.

Further testimony was adduced to the effect that cash vouchers for money drawn by E. K. Stewart, general manager and treasurer of the Columbus company during the Clark alliance, were unsupported by any accompanying papers.

Documentary evidence was also introduced by Attorney Edward C. Turner, counsel for the rail-light company, purporting to show that the Clark company drew labor and construction fees totaling $165,075, in connection with the building of power stations. Mr. Turner contended that the Clark company was not entitled to these fees in addition to what it was already receiving. He also held improper a discount of $86,000 taken by the Clark company on securities handled by it.

It was testified in connection with the reorganization of the railway in 1919, after the court had threatened to appoint a receiver unless a new management should be provided, that Mr. Stewart refused to vote either for the ousting of the Clark interests or for any new official or director. Two other directors who voted against a change switched their votes later but Mr. Stewart held out, it was testified.

Master Commissioner George B. Okey, in charge of the case, may not report his findings for some time.

$152,119,927 of Securities Authorized

During the twelve months ended Dec. 31, 1920, California utilities filed with the Railroad Commission applications to issue securities that aggregated $179,668,083. The commission approved applications to the extent of $152,119,927, denied applications totaling $250,500, dismissed requests aggregating $3,491,560 and on Dec. 31 had pending applications totaling $50,678,783. In only two years since the effective date of the Public Utilities act, March 23, 1912, has the amount of securities authorized by the commission in 1920 been exceeded. In 1914 the commission authorized $226,725,501 and in 1916 $186,633,146. In 1919 the issues amounted to $72,774,902. Since March 23, 1912, the grand total of securities authorized by the commission amounts to $1,084,560,452.

Permission to issue securities was obtained by the several classes of utilities as follows:

	Twelve Months Ended Dec. 31, 1920	Twelve Months Ended Dec. 31, 1919
Steam railroads	$4,523,354	$4,812,811
Electric railways	46,434,279	8,867,562
Gas and electric companies	82,515,708	56,095,461
Water companies	12,215,650	1,445,831
Telephone and telegraph companies	2,990,755	161,390
Warehouse companies	401,050	634,200
Paper companies	.....	.....
Pipe line companies	.....	.....
Steamship companies	14,100	540,340
Motor companies	3,025,031	217,305
Total	$152,119,927	$72,774,902

The securities authorized to be issued were for the following purposes:

Purpose	Twelve Months Ended Dec. 31, 1920	Twelve Months Ended Dec. 31, 1919
To install additions and betterments	$73,045,192	$43,708,588
To refund indebtedness	3,508,460	18,526 152
To be used for collateral	29,580 000	797,000
For reorganization purposes	43,594,500	9 743,162
For miscellaneous purposes	2,391 775	.....
Total	$152,119,927	$72,774,902

Bondholders' Status Fixed

Holders of Underlying Securities Benefit by Ruling of Court of Appeals of Ohio

Holders of the underlying bonds of the former Cincinnati, Dayton & Toledo Traction Company's system between Cincinnati and Dayton, Ohio, benefit by a decision handed down by the Court of Appeals at Cincinnati, Ohio, in a case which came up from the Butler County Courts. The decision written by Judge Wade Cushing and concurred in by Judges F. M. Hamilton and Robert Z. Buchwalter gives these mortgagees rights in a $500,000 power plant near Hamilton built by the Cincinnati Traction Company.

The Cincinnati, Dayton & Toledo Traction Company was formed by consolidating six separate companies which operated portions of what later became the single traction line. The Butler County Common Pleas Court ruled against the holders of the bonds of these companies upon their claims against the power house, and they appealed to the Court of Appeals. That body now holds that the underlying bondholders or mortgagees are entitled to have their rights restored to the condition they were in when the system was operated as the Cincinnati, Dayton & Toledo Traction Company, or to have such an interest in the new power house as would equal the cost of such restoration.

This ruling was made upon the ground that when the new power house was built the five separate power houses were destroyed. The decision also holds that the underlying bondholders have similar rights in the new rolling stock, which was bought to replace old rolling stock sold or scrapped by the new company. Regarding the dispute over $250,000 which accumulated in the net earnings fund the court declares the operating company and the State Public Utilities Commission were neglectful as the net earnings should be apportioned among the several divisions on the basis of their earning capacity, and the court suggests a master commissioner be appointed to decide the proportion of distribution.

Two Years' Operation Compared

Service-at-Cost in Boston Proves to Be Earning More Nearly the Fixed Return

During the twelve months that ended Dec. 31, 1920, total expenses of the Boston (Mass.) Elevated Railway including dividends as guaranteed under the public control act, exceeded total receipts by $346,952. This result, however, is a great improvement over the preceding year, which showed a loss of $2,366,494.

The text of the report is the same as that included in the trustees' report to the General Court for the year ended Nov. 30, 1920, which was reviewed in the ELECTRIC RAILWAY JOURNAL of Jan. 22, page 197, and Feb. 26, page 420. All figures, however, are brought down to Dec. 31, 1920.

The average cost of service during the entire year was 10.246 cents per revenue passenger against average receipts of 10.143 cents. The average cost of coal was $10.07 per ton.

The views of the public trustees on the subject of fares are clearly expressed in favor of continuing the 10-cent flat rate for the time being. The 5-cent fare service on certain short lines not in competition with 10-cent lines is considered experimental until results can be determined.

INCOME STATEMENT

Operating Income:	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1919	Percentage Change
Passenger revenue	$33,096,764	$28,752,675	15.2
Special car revenue	12,183	14,869	*18.1*
Mail revenue	737	722	2.1
Express revenue	88,658	89,003	*0.4*
Miscellaneous transportation revenue	4,383	3,002	46.2
Total revenue from transportation	$33,202,725	$28,860,271	14.8
Station and car privileges	300,228	293,872	2.2
Rent of tracks and facilities	39,059	41,477	*5.8*
Rent of equipment	1,644	5,210	*68.5*
Rent of buildings and other property	100,500	82,514	21.2
Power	92,192	46,349	99.0
Miscellaneous	14,515	74,898	*80.5*
Total revenue from other railway operations	$548,138	$544,320	0.7
Total railway operating revenues	33,750,863	29,404,591	14.7
Railway Operating Expenses:			
Way and structures	3,226,275	3,783,715	*14.7*
Equipment	4,033,850	4,290,049	*6.0*
Power	4,568,992	2,980,659	53.2
Conducting transportation	11,524,823	10,530,882	4.4
Traffic	3,358	4,758	*29.4*
General and miscellaneous	2,411,824	2,110,285	14.2
Total railway operating expenses	$25,769,122	$23,700,339	8.8
Net revenue, railway operations	7,981,741	5,704,252	40.0
Taxes assignable to railway operations	1,142,988	1,045,502	4.2
Operating income	6,838,753	4,658,753	16.8
Non-Operating Income:			
Income from lease of road	823	823	....
Dividend income	9,180	9,180	....
Income from funded securities	6,357	6,290	1.0
Income from unfunded securities and accounts	233,380	42,853	444.0
Income from sinking fund and other reserves	28,853	33,280	*13.3*
Miscellaneous income	2,181	1,565	38.5
Total non-operating income	$280,774	$93,991	199.0
Gross income	7,119,527	4,752,741	49.6
Deductions from Gross Income:			
Rent for leased roads:			
West End Street Railway Co.	$2,590,258	$2,540,893	2.0
West End Street Railway Co., Tremont Subway	177,686	176,545	0.6
Other roads	48,304	57,794	*16.4*
Total rent for leased roads	2,816,248	2,775,232	1.5
Miscellaneous rents	1,612,746	1,339,502	20.8
Net loss on miscellaneous physical property	9,326	7,986	16.8
Interest on funded debt	1,307,019	1,309,477	*0.2*
Interest on unfunded debt	207,945	246,313	*15.5*
Amortization of discount on funded debt	34,860	44,291	*21.3*
Miscellaneous debits	14,882	8,070	84.2
Total deductions from gross income	$6,003,026	$5,730,871	4.8
Net income transferred to credit of profit and loss	1,116,501	978,130	14.0
Proportion of dividends	1,463,668	1,403,970	4.3
Net loss or gain (including proportion of dividends)	*$347,167*	*$2,382,100*	85.2
Profit or loss—delayed items	215	15,605	....
Total deficit	*$346,952*	*$2,366,495*	

TRAFFIC STATISTICS

Year Ending December 31: Revenue Miles:	1920	1919	Percentage Change
Rapid transit passenger cars	14,540,474	14,139,619	2.9
Surface passenger cars	36,697,053	39,393,903	*6.8*
Express cars, etc	106,635	175,020	*39.4*
Sprinkler cars	15,693	12,707	23.2
Total	51,359,855	53,721,249	*4.4*
Revenue Car Hours:			
Rapid transit passenger cars	984,150	978,591	0.8
Surface passenger cars	3,643,145	3,770,727	*3.3*
Express cars, etc	10,218	16,765	39.1
Sprinkler cars	1,516	1,017	49.1
Total	4,639,029	4,767,100	2.7
Passengers Carried:			
Revenue passengers on rapid transit and surface cars	335,526,561	324,758,685	3.0
Miles of line	248.16	248.42	....
Miles of revenue track	461.87	462.56	....

Italic indicates deficit or decrease.

Proper provision for depreciation is another highly important factor cited by the trustees as a reason and necessity for maintaining fares at higher levels than in the past. In concluding their report, they say:

> The occasion for the advance in fares on street railways is not alone the greater cost of labor, materials and supplies, but as well a radical change in policy with reference to provision for depreciation. It is now generally admitted that no sane management would fail to set aside from current receipts a sufficient amount to meet renewal and replacement of property that is wearing out day by day. The practice of maintaining these properties by hand to mouth methods has proved disastrous and is being abandoned.

Financial Rearrangement Proposed

Another change is proposed in the financial structure of the Northern Ohio Traction & Light Company, Akron, Ohio. On May 16 the stockholders of that company will vote on reclassifying the present 6 per cent preferred stock, of which $10,000,000 is authorzed, so that $5,451,800 will be 6 per cent preferred stock and $4,548,200 will be 7 per cent preferred stock. The amount of common stock is to remain at $10,000,000. All preferred stock dividends are to be cumulative and save as to the rate of dividends, both classes of preferred stock are to have identical preferences and voting powers.

It is explained that during the past four years the company has more than doubled its gross earnings. Also during this period more than $7,900,000 has been expended in enlargements and improvements. More money is now required for like purposes. The course open to the company is to sell bonds, debentures or stock. As the present 6 per cent preferred stock cannot be sold at a reasonable price the management has decided that it would be advantageous to increase the dividend rate to 7 per cent and put out more stock than to issue debentures or other short-time obligations which would take precedence over the preferred stock and have a fixed maturity. The stock at the price offered will give the purchaser a return of 7.37 per cent. Stockholders are to be offered the opportunity:

1. To subscribe for 7 per cent preferred stock at 95 and dividends. For each share of 7 per cent preferred stock so subscribed, two shares of 6 per cent preferred stock may be exchanged for two shares of 7 per cent preferred stock.

2. To exchange 6 per cent preferred stock for 7 per cent preferred stock without subscribing for 7 per cent preferred stock upon the payment of $10 per share on condition, however, that the holders agree not to sell prior to Jan. 1, 1923, for less than $95 per share the 7 per cent stock so acquired. This requirement is to protect the company's market during the campaign which it proposes to conduct for the purpose of selling preferred stock to customers.

The company will accept payment in installments over a period of eight months.

A Road Without an Owner

The Monterey & Pacific Grove Railway, operating between Monterey and Pacific Grove, Cal., will have to raise $8,000 and be prepared to spend that amount in putting the system in shape, before any relief will be given in the shape of increased fares. This is the order of the Railroad Commission of California issued on April 11, on the application of the utility for authority to increase its charges.

The line was once controlled through stock ownership by the Coast Valleys Gas & Electric Company. The ownership, according to the Coast Valleys company, changed in May 1920, when the stock of the railway was sold at public auction in New York City to L. T. Fetzer. It brought $184. The Coast Valleys Company, however, still owns the carhouse and shops. James S. Pollard, president of the Coast Valleys, says there is no corporate connection between his company and the owner of the railway line.

Neither the New York owners nor the Coast Valleys are willing to assume liability for the railway company's bonded indebtedness or other debts. At the public hearing on the matter held by the commission the local manager of the road was asked if he or some other authority would make available a few hundred dollars necessary to make urgent track repairs.

"There is no such authority," he answered.

The commission is satisfied that the local management is capable, but it says the needed cash must be placed at his disposal before higher fares will be considered. Investigation by the commission shows that there is outstanding common stock of the par value of $300,000 and $270,000 of bonds. The total investment in road and equipment, as shown by the company's last annual report, December, 1920, is $612,833. Against these figures the commission's engineers find a reproduction cost of $132,488 and a depreciated reproduction cost of $73,214.

Bond May Remove Need for Receivers Acting

Action taken by Homer Hennegar, judge of the Tippecanoe County Circuit Court at Lafayette, Ind., in the appointment of receivers for the Lafayette Service Company, was suspended recently when the defendant company filed an appeal bond in the sum of $75,000. In consequence the local railway is again placed in the control of the Lafayette Service Company and Edward M. Watson and Frank Scott, receivers, are relieved of their duty until the Supreme Court of Indiana rules on the appeal.

Mr. Watson and Mr. Scott recently took over the management of the railway as receivers following proceedings instituted by a local property owner, who alleged that by reason of the company's failure to relay tracks and resume service on East Main Street his property there had been damaged.

A special attorney for the city asked that the appointment of a receiver be delayed in the interest of the Eastern bondholders. The court refused to defer action and said that the receivers would be empowered by the court to proceed with the relaying of the East Main Street track and make other needed repairs. The railway attorneys gave notice of appeal.

It is said that the attorney of the bondholders made a statement at the hearing on the petition for a receiver that the line would be improved generally and the Oakland Hill line rebuilt, and that six new one-man cars would be put in operation in Lafayette by Sept. 1. The filing of the bond will now afford the company an opportunity of carrying out these suggestions of the attorney.

Cheerful News—Seattle Has a Surplus

If Seattle can keep up the pace of earnings established by the Municipal Railway in March then two years hence the present cash deficit in the operation of the road may be wiped out. This is the assumption based on the surplus of $18,538 shown for that month. Mayor Caldwell has never waxed very enthusiastic about the Municipal Railway, but he is cheered by the change from red to black in the statement of earnings. He said:

> The financial report of the Seattle Municipal Street Railway for March, delivered to me by the general superintendent of railways, shows the total revenues $545,382.
>
> This was swelled by some forteen odd thousand dollars received in March for property previously sold, thus swelling the receipts to $564,098.
>
> The total expenses for March were $383,129. To this expense should be added interest on general bonds, $2,979; interest on utility bonds, $68,533; discount on utility bonds, $575; miscellaneous interest (warrants), $1,375; or a total expense for March, exclusive of depreciation, $456,593; to which should be added one-twelfth of the installment of principal due next March, $70,250, or a total expense, including installment of interest and principal of $526,843, with revenues of $545,382, or a surplus of $18,538 to apply on the actual cash deficit or on depreciation charge.
>
> If this basis continues for two years we will be able to wipe out the actual cash deficit. The receipts of the fourteen odd thousand dollars above referred to will also go toward wiping out the actual cash deficit.
>
> The only other full month on the present 8¼-cent fare is February, with its twenty-eight days. By taking 28-31 of the March revenues of $545,382, we get $492,603, for twenty-eight days as against $492,758, revenues for February, or practically the same.
>
> The total number of passengers of all kinds carried during the thirty-one days in March was 8,398,294 as against 7,523,915 for the twenty-eight days of February and as against 8,466,553 for January, eight days of which were under the 6¼-cent fare. The figures show that Easter Sunday, March 27, there were 237,947 passengers, or 42,000 more than on any other Sunday in the month. Evidently a lot of people go to church once a year.

Service Resumed by Commission Order

Public Service Commissioner Barrett authorized the Brooklyn Rapid Transit Company on April 24 to resume service on the Church Avenue line without transfers. The order followed the enactment of the bill of Assemblyman Walter F. Clayton, under the terms of which the Public Service Commission was granted authority to permit service for a 5-cent fare minus transfers. The original charter of the old Nassau Electric Railroad provided for transfers, but Receiver Garrison said the line could not be operated at a profit if the transfer privileges were insisted upon. The line has not been running since the strike in August of last year. It carried 1,000,000 passengers a month, about 600,000 of whom the company claimed took transfers. The shutting down of the line has been a great inconvenience to the traveling public, the line being the only crosstown line in that section of Brooklyn.

Financial News Notes

Mr. Adair Resigns as Atlanta Director.—Forest Adair has resigned as a director of the Georgia Railway & Power Company, Atlanta, Ga. He has been a director of the company since 1912.

Abandonment Approved.—The Millville (N. J.) Traction Company has been granted permission by the City Commission of Millville to abandon its line in South Millville and the tracks will now be removed.

Rhode Island Company Losing.—In its report for February, 1921, recently submitted the Rhode Island Company, Providence, R. I., failed by $109,141 to meet its fixed charges. This makes a deficit for the first two months of the year of $183,219. The passenger earnings, however, increased $61,827 or 12.5 per cent over the same month a year ago.

Receiver for Austin Street Railway.—William J. Jones, president of the Austin (Tex.) Street Railway, has been appointed receiver of the company on the application of the Rochester Trust Company, Rochester, N. Y. *Moody's* gives the only bonded indebtedness of the company as $780,000 of 6 per cent bonds dated 1911 and due 1936, with the Equitable Trust Company, New York, N. Y., as trustee.

$800,000 Written Off.—In connection with the payment of the dividend for the first quarter of 1921, at the rate of 7 per cent, the Capital Traction Company, Washington, D. C., announced that increased earnings during the last two years have made it possible for the corporation to write off losses of previous years due to the enforced retirement of single-truck cars. Some $800,000 was written off.

Car Trusts Offered. — Alexander Brown & Sons, Baltimore, Md., recently offered for subscription at prices to yield about 8 per cent, according to maturity, $240,000 of 7 per cent car trust bonds of the Annapolis Short Line

Railroad. The bonds are dated Jan. 1, 1921, and are due $24,000 annually from Jan. 1, 1922, to 1931. They are unconditionally guaranteed as to principal and interest by the Washington, Baltimore & Annapolis Electric Railroad.

Sale Decree Filed.—An agreed decree approving the sale of the Gary (Ind.) Connection Railway and the Gary & Valparaiso & Northern Railroad to representatives of the first mortgage bondholders of the two companies was filed with the clerk of the Federal court recently. The object of this suit, it is said, is to enable the first mortgage bondholders to continue the operation of the roads and to clear the bonds and lift the receivership. Actions to declare the roads insolvent were filed in 1918.

Commission Modifies Bond Issue.—An order has been made by the Public Service Commission of Indiana modifying a former order permitting the Indianapolis & Louisville Traction Railway, Scottsburg, Ind., to issue $178,000 of 5 per cent first mortgage bonds, dated April 1, 1912, and maturing in thirty years. The previous order permitted the sale at 80 per cent of par, but the bonds may now be sold at not less than 75 per cent. The proceeds are to be used solely in paying 80 per cent of the cost of improvements and additions made between June 16, 1919, and Sept. 20, 1920. The company has been absorbed by the Interstate Public Service Company, Indianapolis, Ind.

Limit to Indebtedness Removed.—The limit of indebtedness of the Minneapolis Street Railway, which has been $1,200,000, has been removed by an amendment to its articles, filed with the Secretary of State. The directors voted a resolution which reads: "Whereas it is deemed advisable by said Minneapolis Street Railway that said limitation of indebtedness or liability be removed, now, therefore, be it resolved that Article 4, limiting indebtedness and liability to $1,200,000, be and the same hereby is amended to read as follows, to wit: "The amount of indebtedness or liability to which said corporation shall at any time be subject shall not be limited."

B. R. T. Wants Transfer Points Discontinued. — Although Public Service Commissioner Barrett has approved the application of three companies at present under the receivership of Lindley M. Garrison to resume experimental operation on a part of the Park Slope line the Brooklyn Rapid Transit Company, Brooklyn, N. Y., has refused to put its own plan into effect. A new condition for restoring service in that section is that the Public Service Commission should permit the discontinuance of the 2-cent transfer at thirty-six other points in the borough. Service on the Park Slope line has been suspended since Jan. 13. The operating companies promised resumption if the route were made shorter. When the commission did not approve of shortening the route service was abandoned.

Hartford Lines Doing Well.—President Lucius S. Storrs of the Connecticut Company said at a recent hearing before a committee of the Legislature at Hartford that the 10-cent fare—raised from 7 cents on Nov. 1, 1920—has been very successful from a financial standpoint. The Connecticut Company's local charter requires the payment to the City of Hartford of 2 per cent of gross receipts. This amounted to $34,283 on an income of $1,714,176 in 1919 and $42,883 in 1920, when the gross receipts were $2,144,194. Thus there has been an increase in income on Hartford lines of $430,017 in the past year. In Hartford jitneys were eliminated by means of a city ordinance, so that the company is free from competition that has grown to serious proportions in other cities in which the Connecticut Company operates.

$15,000 Voted for San Francisco Appraisal.—At a meeting of the public utilities committee of the Board of Supervisors of San Francisco, Cal., on April 13, it was voted to recommend that the finance committee provide $15,000 for the city engineer's appraisement of the properties of the United Railroads and to fix a valuation at which San Francisco can acquire the system by paying for the property out of the earnings of the railway without a bond issue. According to Amendment 30, carried by a 30,000 majority on the November, 1920, ballot, an enabling act was approved providing for the purchase of public utilities on a "pay-as-you-go" basis. It is expected that a proposal for the purchase will be placed on the ballot at the general election in November.

$221,786 Surplus at Richmond.—Incident to changing its year from June 30 to the calendar year stockholders of the Virginia Railway & Power Company, Richmond, Va., met on April 21. Only routine matters were discussed and the present directors and officers were re-elected. The statement of earnings and expenses of the company compiled for the system for the six months ended Dec. 31, 1920, showed the total gross earnings to be $5,779,545, an increase of $987,494 over the same period of 1919. Operating expenses totaled $4,280,682, an increase of $1,074,314 over the same period of 1919. Taxes and licenses paid by the company for the six months amounted to $354,701, an increase of $28,339. The surplus over fixed and all other charges, including depreciation, for the entire operations for the period was $221,786.

Dallas Steadily Going Behind.—A detailed statement of operating costs and revenues for the thirty-nine months of its operation under the present franchise was presented by the Dallas (Tex.) Railway before the Board of City Commissioners in the fare hearings now being conducted on the company's application for a 7-cent fare. The operating statement shows that the company incurred a deficit of $651,374 between Oct. 1, 1917, and Dec. 31, 1920, and that the return realized for the first three months of 1917 was 4.55 per cent; in 1918, 3.75; in 1919, 5.09, and 1920, 4.87. The return for the operation of the terminal for these periods was somewhat less. The pay of platform men has increased 113 per cent since 1915, according to figures in the statement. The property value of the company has increased from $7,662,069, to $9,317,813 in the last three years. The original valuation was agreed upon when the franchise was granted and each addition has been made in accordance with the terms of the franchise and on authority of the Supervisor of Public Utilities.

Even Electric Railway at Miami Prospered.—The wealth of the world goes to Miami, Fla. Moreover, the wealthy don't all ride around in the lap of luxury in their own Packards or Rolls Royces. Not at all. Proof of this is available. Look at the Miami Beach Electric Company's record. Bringing the total number of passengers for the season up to more than a quarter millon—263,165 to be exact—the Miami-Beach Electric Company, Miami to Miami Beach, Fla., hauled 80,166 passengers during the month of March, according to figures announced by Manager Ellis. Then, too, the company paid the county of Dade, which built the causeway the electric company uses, $1,101.16 during the month. This represents 1½ cents for each passenger that crossed the causeway by trolley. Mr. Ellis now proposes to take up with the county commissioners the question of building four switches, 300 ft. long, two of which have to be built on the causeway, so as to permit a ten-minute schedule between Miami and Miami Beach.

Protective Committee Recommends Refunding.—Owing to the continuation of the receivership of the Birmingham Railway, Light & Power Company, Birmingham, Ala., the company found it impossible to pay off the $1,200,000 of 6 per cent two-year gold notes which fell due on April 1. The notes originally came due on April 1, 1919, but were extended to April 1, 1921, at 7 per cent. The protective committee representing the noteholders has entered into a tentative agreement with representatives of the owners of the equity of the property, under which it is proposed to issue to the depositing noteholders general and refunding mortgage twenty-year 8 per cent bonds, Series A, par for par. In addition the company proposes to use the proceeds of $800,000 of general and refunding mortgage twenty-year, Series B, 8 per cent bonds, together with cash from the sale of securities junior to these bonds, to reduce the floating debt to an amount not to exceed $450,000. Failure on the part of the committee to deliver 85 per cent of the outstanding notes for exchange will defeat the plan. At the time the proposal for the exchange was made to the security holders there were on deposit with the committee $1,197,000, par value, out of the $1,200,000 total of notes outstanding.

Traffic and Transportation

Eight-Cent Fare Still

Court Restrains City of New Orleans from Reducing Fare of Railway in Receivership

Judge Henry D. Clayton, Montgomery, Ala., presiding in the Federal District Court at New Orleans, La., in lieu of Judge Rufus E. Foster, who excused himself at the suggestion of the officials of the city government, has sustained the contention of the New Orleans Railway & Light Company and granted the company a temporary injunction restraining the city from interfering with the operation of cars there or changing the rate of fare, fixed by the court at 8 cents.

An ordinance adopted by the city placed the rate of fare at 7½ cents. This rate of 7½ cents Judge Foster refused to approve. Moreover, Receiver O'Keefe, of the railway, refused to put the new rate in force under the ruling of the court. The city has two weeks to answer the temporary injunction and City Attorney Ivy G. Kittredge and his assistants are now engaged in preparing the city's defense against a permanent injunction.

The people have taken the decision uncomplainingly, but not so the city officials. It is the belief of Commissioner Maloney, of the Public Utilities Commission, that the ruling of the court paves the way for an ultimate fare of 10 cents. He bases his opinion upon the ruling of the court which restrains the city from interfering with the 8-cent fare or any other rate of fare which the federal court and the receiver of the company may determine as necessary to give a fair return upon the valuation of the property.

From figures taken from the petition of the railway and reports of the business transacted by the company during the first two months of 1921 Commissioner Maloney draws the conclusion that there will be a difference of $1,425,549 between the 3.1 per cent earned at present and the 8 per cent return petitioned for. With reference to this matter Mr. Maloney says:

> From the petition of the receiver it is noted that the alleged value of the railway property is given at $29,400,000 and that the rate of return he asks is 8 per cent.
>
> During the first two months of this year the system earned a net return of 3.1 per cent. He asks the court for such other fare as the court may find necessary to enable the payment of all operating expenses, the usual reserve and a "fair return" on the valuation of the property.
>
> The city is enjoined from interfering with the 8-cent fare or the other fare that the court may fix.
>
> On the basis of 110,000,000 passengers carried yearly an increase of 1.3 cents per passenger would be required. Interest on the new money would call for an additional increase bringing the total fare up to about 10 cents.

There is talk on the part of representatives of the city of permitting the jitneys to return.

It is reliably reported that a representative of the Eastern investment bankers, now on his way to New York, called on Commissioner Maloney to learn his final stand on the matter and that nothing will be done until word is received from this representative.

Bus Regulation May Go to a Vote

The old traction fight at Toledo, Ohio, will again be brought before the people at an election this fall through the filing of a referendum on the bus regulatory ordinance passed by Council a month ago. It had been proposed to put the ordinance into effect on April 21. It provided for tax of from $25 to $100 for each vehicle and required the bus owner to furnish bond from $5,000 to $10,000 depending upon carrying capacity.

The measure was counted upon to put the bus business on a fair competitive basis with the cars of the Community Traction Company, and it was thought it would divert between $500 and $1,000 a day to the railway system. Street Railway Commissioner Wilfred E. Cann and city officials favored the regulation of the buses. They will probably make an active fight before the people for passage of the ordinance.

Progress is reported on the fixing of a fair rate for power to be charged by the Toledo Railways & Light Company for the operation of the traction lines. David Friday, Ann Arbor, economist, and V. B. Phillips, Cleveland, consulting engineer, have been retained by the city to fix the charge for this service.

Five-Cent Fare Lines Planned in Medford

The trustees of the Boston (Mass.) Elevated Railway have authorized the extension of the 5-cent fare for local riders to six lines operating in Medford and part of Somerville to the Sullivan Square terminal of the main rapid transit line. As in the case of the 5-cent fare service in Malden and Everett, started recently, a fare of 5 cents will be charged for a local trip without transfer by means of payment to the conductor on the car, while a 10-cent fare will be charged if the passenger continues his ride on the rapid transit line to Boston. A local crosstown service will also be started in this community, operated with one-man cars, on a 5-cent fare basis.

No date has been set for commencing this service, but it will be undertaken as soon as the necessary arrangements can be made for the collection of 10-cent fares from inbound passengers arriving at the Sullivan Square Terminal on these lines.

Railway Protest Unavailing

Autos to Compete with Bamberger Electric—Commission Must Not Bar Progress

An automobile stage line is to be operated between Salt Lake and Ogden, Utah, a certificate of convenience and necessity having been issued by the Public Utilities Commission of Utah, after a hearing on the application for the permit of Bruce Wedgwood and Fred A. Boyd.

The application of Wedgwood and Boyd was contested by the Bamberger Electric Railroad and the Oregon Short Line Railroad, on the ground that they are prepared and ready to give adequate freight service, by means of equipment and rights-of-way obtained at a huge expense, and that there is no public necessity or convenience to be served by the new method of transportation that they cannot serve or are not willing to serve. They further set up that the proceeds of the taxes they pay go in part to the construction and maintenance of the highways. The applicants, it was pointed out, would operate over these highways, without contributing anything to their construction or maintenance.

Claims of the Truck Operators

On the other hand the operators of the truck service contended that they are able to give a superior service, one that would be speedier in its operation, and would also require the handling of the goods fewer times. The commission yielded to this argument, but in deciding that service may be established also sets up some conditions.

In its decision the commission said in part:

> The applicants must furnish stations, warehouses and persons to take charge of and keep, with reasonable safety, the freight intrusted to their care. There must likewise be an assurance that the parties giving service will he able to furnish sufficient rolling stock to take care of the business. Such direct handling and hauling of freight would clearly indicate that a service would be rendered that would he more convenient and direct than is given by the railroads.
>
> The commission should not attempt to bar progress. The power vested in the commission is intended to he constructive, not repressive. The public is entitled to the best service possible to be given, and to the freest utilization of valuable new inventions. If the motor truck can demonstate its superiority over the railroad for the transportation of short-haul freight, and if by its use economy of time or money is effected, public convenience and necessity will require its being brought into service, and ultimately it will be used, with or without sanction.
>
> Even now trucks are carrying great quantities of freight over the route in question here. This is being done under private contract, which places the service outside the range of regulatory law. If this petition is granted it is probable that much of this traffic will come under control, and rates and service will be stabilized and made more satisfactory and dependable every way to the shipping public than it now is under private contract operation.

The order requires the publishing of schedules of rates and fares and of arriving and leaving time at the various stations to be served by the new service. It is effective on due notice to the commission and the public, which means thirty days after filing with the commission.

San Antonio Decision Prompts Filing of Supplementary Brief

Recent decisions of the United States Supreme Court in public utilities rate cases, especially the case in favor of the electric railway at San Antonio, have prompted Churchill Humphrey, attorney for the Louisville (Ky.) Railway, to file a supplemental brief in the United States District Court of Appeals at Cincinnati, claiming that the litigation now pending between the Louisville Railway and the city of Louisville in the Federal Courts is analogous to the conditions governing the San Antonio case.

Mr. Humphrey holds that the two cases are alike in that the city of Louisville is without legislative authority to enter into an irrevocable contract with the company, since by so doing it would lose its right to regulate the operation of the railway system.

A Dead Cow Is Worth More Than a Live One

A combination of paris green to turn the grass brown and the free-range law in Florida have just cost the Tampa Electric Company $11,000 — for the usual array of registered cattle that always bobs up where only the tick-infested breed sprung before the railroad knocked 'em over, or in this case the railway poisoned them.

In an endeavor to eradicate weeds and grass growing between its tracks on the suburban line to Port Tampa the Tampa Electric Company sprinkled the way with a solution of paris green. During the night the "sacred" cows of folks along the line and in Port Tampa indulged freely of the grass and weeds and a total of 102 died within the succeeding ten days. Of course they all died from the poisoned grass. When it came time to settle the cows came high. The owners even refused to allow for the hide and collected in a total, more than $11,000 according to T. J. Hanlon, Jr., general manager.

The Tampa *Tribune*, waging a fight for a No-Fence law abolishing free range, seized upon the incident to show passengers one of the reasons why railroad rates and trolley rates seem high —because the public must foot the bill for such follies as free range.

Railway May Take Over Jitneys

The possibility was discussed of bringing the entire transportation facilities of Muskegon, Mich., and surrounding community under the ownership of the Muskegon Traction and Lighting Company and under control of proper, publicly constituted authority at a hearing recently conducted by the Michigan Public Utilities Commission.

A joint committee representing the various interests of the community was named to compile a definite report as to the possibility of the traction company buying the bus equipment now in use, and to gather all other necessary data relative to a revolutionary move of this kind.

If the traction company finds it possible to finance such an undertaking it appears likely the committee will recommend that this solution of the present and long-standing problem be adopted.

President George Steinwedell said he would take the matter up with the company at once and would know in a short time if it would be possible for the company to purchase the jitneys, which have a present value of about $50,000.

East St. Louis-St. Louis Rates Upheld

The Interstate Commerce Commission has dismissed the complaint of the Greater Belleville Board of Trade against the fares on the East St. Louis & Suburban Railroad for the transportation of passengers from Belleville and East St. Louis, Ill., to St. Louis, Mo., finding them not unreasonable, unduly prejudicial, or otherwise unlawful. It was charged that the railway had not only increased materially the interstate fares previously in effect, but had changed the basis of such fares by establishing various fare groups or zones.

The complaints further stated that the fares assailed materially exceeded the one-way and commutation fares previously in effect, and that the time within which commutation fares could be used had been reduced from sixty days to a calendar month. They contended also that the present fares were unreasonably high, distances considered, in comparison with fares in effect over defendants' city line, and that the disruption of long-existing fare groups retarded the development of these communities, and imposed an undue burden upon their inhabitants.

Witnesses for the railroad testified that electric interurban lines generally throughout that section were charging 3 cents per mile, having obtained injunctions from the federal courts wherever the provisions of state statutes were contravened. They showed that the fares on the Belleville division had been maintained on a lower basis than those applying over their other interurban lines. The former, as increased on the dates previously mentioned, average slightly more than 2 cents a mile from Belleville to St. Louis, and a fraction under 2 cents to East St. Louis, whereas the latter were increased at the same time to 3 cents per mile. The travel over the other divisions is not as heavy as over the Belleville division, but the witnesses for the company said that due consideration has been given to this factor.

"Tokens" for Convenience and Economy.—The Peoria (Ill.) Railway is using "Tokens" exclusively on its city lines at the rate of two for 15 cents or in multiples of 15 cents. The cash fare in Peoria is 8 cents.

Retention of Five-Cent Fare Recommended

City Attorney, Robert L. Shinn, of Sacramento, Cal., recently received a report from the California Railroad Commission offering recommendations for the operation of the Pacific Gas & Electric Company "with increased revenue without sacrificing service." Among the suggestions are the following:

A continuation of the present 5-cent fare.
The installation of thirty-six new one-man cars.
The construction of a loop at the Southern Pacific station.
The elimination of duplications of service at a saving of $29,000 for the year.
The continuation of bus service.

In the matter of continuing the present 5-cent fare, which was the point at issue when the Pacific Gas & Electric Company sought the survey, the elimination of coupon books is suggested, thus making all regular fares 5 cents. It is also recommended that a full half fare be charged school children and that all free transportation except to those in the transportation department be denied. Commissioner D. N. Carmichael has stated that he is willing to carry out the recommendations of the State Railroad Commission if the company will assist the city.

Civic Bodies After Des Moines Jitneys

The two leading business men's organizations and the women's club took a hand during the week ended April 16, in an effort to help bring order out of chaos in the Des Moines City Railway-City Council-jitney controversy. The Greater Des Moines Committee and the Chamber of Commerce each chose committees to make it their special business to help solve the problem, while the women's club adopted resolutions urging elimination of the buses.

A meeting of the two committees named by the commercial organizations with members of the City Council, representatives of the street railway employees unions and officials of the Des Moines City Railway was set for April 18 and it was the hope of the civic organizations that some tangible good would result.

In its preliminary work the committee of the Chamber of Commerce offered three possible suggestions:

1. Abrogation of the present working agreement between the company and its trainmen, and placing the men on an open shop basis.
2. Elimination of the buses from the streets on which street cars operate.
3. Reduction of the fare from 8 cents to 6 cents.

According to the terms of the Lake jitney bus bill, passed at the recent session of the Iowa Legislature, councils of Iowa cities may by vote restrict the operation of jitney buses to streets which are not occupied by electric railway tracks. This law will give the City Council of Des Moines a chance to rid the city of the buses in case a settlement is made of the street railway question.

Prefer 10-Cent Fare to Zone System

The Massachusetts Department of Public Utilities has announced a public hearing to be held on May 4 in Boston, on the petition of eleven cities and towns served by the Worcester Consolidated Street Railway for a revision of the suburban zone fare system now in effect. The petitioners protest the 7-cent zones and request a return to the old fare limits, generally speaking the boundaries of cities and towns, a 10-cent flat fare being suggested. The city of Worcester is not included in this matter, a 10-cent fare having been established there on Feb. 6 by order of the Department of Public Utilities. It was at that time that the fare on the suburban line zones was increased from 6 to 7 cents per zone, this increase having lead the suburban patrons to petition for a flat 10-cent fare in preference to the short zone system and 7-cent rate.

Transportation News Notes

One-Man Cars for Entire System.—The Madison (Wis.) Railways has petitioned the Railroad Commission for permission to equip its entire system with one-man cars.

Ten-Cent Fare in Effect.—The New Jersey & Pennsylvania Traction Company, Trenton, N. J., is now charging a 10-cent fare on its Pennsylvania divisions running out of Trenton, the increase having been allowed by the Public Service Commission of Pennsylvania. The company had been charging 8 cents.

Eight Cents in Scranton.—Under an order recently handed down by the Pennsylvania Public Service Commission the Scranton Railway is authorized to collect an 8-cent cash fare upon thirty days' notice, with four tickets for 30 cents. The present rate is 7 cents, with four tickets for 25 cents. At the expiration of a year, during which time the new rate will be in effect, the commission will review the railway finances and give a new finding.

Ten Cents in Alton.—An increase from 8 cents to 10 cents in fare on the Alton lines of the Alton Granite City & St. Louis Traction Company has gone into effect. The rate between Venice and Brooklyn has also been raised from 8 cents to 10 cents, with tickets at five for 40 cents. Federal Judge English has granted an injunction restraining Illinois authorities from interfering in the fare adjustment by the company, which is in the hands of federal receivers.

Galveston Railway Gets New Hearing.—Judge Hutcheson recently granted the motion asked by counsel for the Galveston (Tex.) Electric Company for a new hearing, after having recently decided the case in favor of the City of Galveston in denying an injunction against the enforcement of the 5-cent fare ordinance. The court indicated that more information on the cost of maintenance and depreciation will be forthcoming through the appointment of a special engineer by the court for investigation of the costs.

Ten-Cent Fare Denied.—The Board of Public Utility Commissioners of New Jersey has declined to consider an application of the Jersey Central Traction Company for permission to increase fares on all its lines from 7 to 10 cents, pending action by the State Supreme Court on an appeal from a ruling of the old board which rejected a similar application. The application was based on a statement that under the present tariffs the company has lost money steadily and will be forced into the hands of a receiver unless relieved.

Recommendation Reported Incorrect.—H. C. Eddy, street railway engineer of the Board of Public Utility Commissioners of New Jersey, denies that the recommendation was his that patrons of the Trenton & Mercer County Traction Company, Trenton, N. J., be required to have the exact fare ready when they board the cars or be made to pay 10 cents for a ride. Reference to this recommendation was contained in an item entitled "Commission Inspector Reports on Crowding," which appeared in the ELECTRIC RAILWAY JOURNAL for April 9.

Eight Cents in Cedar Falls.—Fares in Cedar Falls, Iowa, were increased from 7 cents to 8 cents on April 1. This change is in accordance with an agreement made between General Manager Cass of the Waterloo-Cedar Falls Northern Railway, Waterloo, Iowa, and the City Council that the company could advance the rate if after operating for a month under the 7-cent fare the revenue was found to be less than the average monthly revenue derived from the 10-cent rate which had been in existence for the five months previous. A statement issued from the offices of the company's auditor shows that there has been a decrease of 15.3 per cent as compared to the average daily receipts for the five months previous.

Fares Lowered in Rockford.—The Rockford and Interurban Company, Rockford, Ill., has lowered cash fares from 10 cents to 8 cents within the city limits of Rockford. The company has been charging 10 cents since March 1, 1921, and the new fare became effective April 1. The rate of cash fare is the same on both interurban and city cars within the corporate limits. The decision of the company to reduce the fare 2 cents was reached following complaints of Rock View residents, who objected to paying 10 cents, inasmuch as they live adjacent to the Elgin and Belvidere Electric Company and the Fifth Avenue cars of the City Traction Company of Rockford, both of which now charge 8 cents. All cash fares are now equal.

Reasons for Fare Increase Explained.—Increases granted to the Orem Electric Railroad, Salt Lake City, Utah, in passenger fares are not for the purpose of paying dividends, according to W. C. Orem, president of the company. To make this plain Mr. Orem has had prepared a number of bulletins for display in all of the waiting rooms of the company. The bulletins set forth the amount of increases allowed, which is from 3 cents to 3.6 cents a mile for one-way, with 180 per cent of the one-way fare for the round trip. The former fares for round trips were 190 per cent of the one-way fare. Commutation and school tickets have not been increased in price. Following this citation of fares is a statement that the increased revenues are for the purpose of meeting increased wages, high cost of materials, higher taxes, and interest on money borrowed.

Two Zones Instead of Three.—The Public Utilities Commission of Utah has rendered a decision establishing two zones on the Holliday line of the Utah Light & Traction Company instead of the three which have prevailed in the past. The order is issued as a result of a petition filed by patrons of the line alleging that the three-fare rate was discriminatory and had held back the settlement of the southeastern territory served by the railway. The complainants further alleged that the three-fare system worked an injustice on the traveling public and especially children attending school in Salt Lake. In answer the Utah Light & Traction Company alleged that the fares were just, in that the territory served is sparsely settled, and that the three-fare rate was necessary to produce adequate revenue. The new two-fare system became effective on April 6.

Fares Changed at Columbia.—The Columbia Railway, Gas & Electric Company, Columbia, S. C., discontinued the use of free transfers on Feb. 14, putting into effect on that date exchange tickets at a price of 3 cents each. In other words, the company installed the same kind of system that has been in use by the Philadelphia Rapid Transit Company for some time. The company has since applied to the Railroad Commission for permission to increase the fare from Columbia to Camp Jackson. Ever since the construction of the Camp Jackson line in 1917 it has charged 10 cents, or 5 cents for each zone, the line having two zones. The soldiers were given the benefit of the reduced rate by charging them 15 cents for the round trip when they purchased tickets at the camp exchange. If the company secures permission from the Railroad Commission to charge 7 cents in each zone, the special rate to soldiers will be discontinued and they will be required to pay the same rate of fare as civilians.

Personal Mention

Railwayman President

J. W. Shartel, Oklahoma Railways, Elected to Presidency of State Utilities Association

John W. Shartel has been re-elected to the presidency of the Oklahoma Utilities Association, the precedent of a single term for this office having been abandoned. Mr. Shartel is one of the pioneer electric railway builders of that state. He organized and built in 1902 the Oklahoma Electric Railway, Oklahoma City, Okla., of which he is now vice-president and general manager.

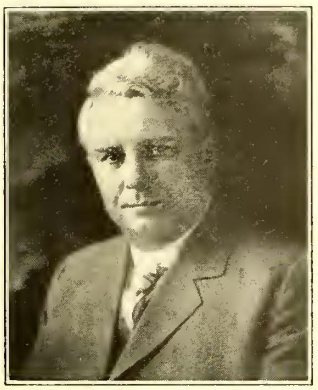
By virtue of the keen and farsighted policy of Mr. Shartel in providing abundant transportation facilities it has been possible for Oklahoma City to grow from a town of 15,000 to a city of 100,000 population in the brief period of about twenty years. The company has been liberal, almost to the extent of being radical, in building new lines through unsettled districts awaiting developments and has successfully carried a large percentage of unproductive mileage until the time when the volume of traffic became sufficient to make it self-supporting.

At the time the undertaking was started, the communities all being small, the street extensions were laid out with private rights-of-way in the center for car tracks, with the result that more than 110 miles of the 145 miles comprising the interurban and city systems are now on private rights-of-way. In advance of the growth of the city the rights-of-way procured for high-speed entrances for interurban cars into the centers of all cities are without grade crossings at either highway or railway. The company has acquired approximately 100,000 sq.ft. of valuable land leading into the heart of the city, where its present terminals are located and where it contracts all its interurban and city transfer business.

The growth of the property has been remarkable. It has been the product of a single mind from its inception to completion and has involved no loss by changes or reconstruction. Notwithstanding high war-time prices and conditions generally adverse to electric railways it has successfully withstood every strain and is now in a prosperous and flourishing condition.

Mr. Shartel was born in Harmonsburg, Pa., on May 1, 1862. Soon after his parents moved to Missouri, where he received his early education in the county schools. He was graduated from Kansas Agricultural College, Manhattan, Kan., in 1884. After leaving college he went to Topka, Kan., and studied law. Having been admitted to the bar in 1885 he practiced law in Topeka for a year and then went to Sedan, Kan. After serving three years there as county attorney in 1890 he formed a partnership with W. C. Hackney, and practiced at Winfield, Kan., until Jan. 1, 1893, when he moved to Guthrie, Okla., where the firm of Asp, Shartel & Cottingham was formed.

In 1898 Mr. Shartel came to Oklahoma City and became general attorney for the Choctaw, Oklahoma & Gulf Railroad, which position he held until 1901. Several years later he formed a law partnership with J. R. Keaton and Frank Wells, which continued until 1912, when he retired in order to devote his time to the Oklahoma Electric Railway, which he organized in 1902 and which had grown to such proportions that it required the greater part of his time.



J. W. SHARTEL

Obituary

Z. V. Taylor Dead

Z. V. Taylor, president of the Piedmont & Northern Railway, Charlotte, N. C., and president of the Southern Public Utilities Company, which operates street railway systems and other utilities in Charlotte and Winston-Salem, N. C., and Greenville and Anderson, S. C., died suddenly on the private car of J. B. Duke while en route from Charlotte to New York.

Mr. Taylor was active in the promotion of the Piedmont & Northern Railway, which was organized in 1912. The rapid growth of the road is shown by the fact that it now operates over 127 miles of track. At the time of his death Mr. Taylor was about to make extensions to the road, which had been blocked by the government's taking over the system in 1916.

The public has best understood his identity with the Southern Power Company as president of the Public Utilities Company and as president of its interurban lines. His spirit and energy permeated all branches of that organization. Perhaps the greatest business tribute paid to him was that shown eleven years ago when the Southern Power Company wanted a fair, diplomatic and astute man to give advice on those problems which confront a fast-growing corporation. He was chosen and secured for his company by winning words and a just, legal show of the facts, privileges and franchise concessions that made his services of great value.

It was in 1910 that Mr. Taylor, then head of the Greensboro Traction Company, was recognized by larger interests as a man whose ability was needed to help develop what later became the Southern Power Company. After three years at this work he and his associates formed the organization of the Southern Public Utilities Company, uniting electric and railway interests in four or five of the largest cities in North and South Carolina.

The stamina which Mr. Taylor had been able to inject into this merger of big concerns went far to make the company a success, and though tried at periods by business depressions it has never been threatened with a serious difficulty.

Mr. Taylor was born in Sparta, Tenn., in 1868. His early training was in the public schools of Oak Ridge, but later he carried on his education without school aid. He next read law under Judge W. P. Bynum at Greensboro, with whom he later formed a law partnership.

Arthur Busse, chief engineer of way and structure of the Great Berlin Street Railway, is dead. Mr. Busse was recognized as the greatest authority on track on the Continent and also was always interested and thoroughly familiar with American practices. During the last two years he had been in such poor health that he had retired from active operating duties, but his ardor for his work remained with him to the end. He was a great admirer of Theodore Roosevelt, whom he strikingly resembled.

J. Henry Meyer, president of the California Street Cable Railroad Company, San Francisco, Cal., and a director in nearly a score of large western firms, died on March 30. Death came after several months' illness. He was a native of Sacramento and sixty-six years old. As the business executive of Antoine Borel, a leading financier in San Francisco's early days, and later as an independent banker, Mr. Meyer exercised great influence in the development of the street railways in San Francisco and the street railway system in Los Angeles. Other firms thrived notably under his guidance. At the time of his death he was interested in many banking, realty and public utility companies.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES BUSINESS ANNOUNCEMENTS

Price of Trolley and Bell Cord Again Reduced

Reductions the Middle of This Month Made in Effort to Stimulate Buying —Stocks Are Curtailed

In an apparent effort to stimulate buying producers of trolley and bell cord have made further price reductions, effective April 13 and 18 in different instances. The price of cotton has been about holding its own for a considerable length of time now so the cost of material is no lower. At this writing spot cotton is quoted at 12.30 cents per pound, New York. Buying shows no improvement and producers are keeping their stocks low, though deliveries are made promptly.

The following prices are now in effect, the range representing the spread between different manufacturer's prices, and the quantity being in each case coil lots or 1,200 ft.: Bell and register cord, mahogany No. 6, 73 to 76 cents per lb.; No. 8, 70 to 73 cents; drab No. 6, 68 to 70 cents; No. 8, 65 to 67 cents; trolley cord, best grade sizes 8 to 12, 59 to 61 cents. Cheaper grades of waterproof trolley cord can be obtained at 51 cents per lb. and at 33 cents per lb., sizes 8 to 12. Mahogany trolley cord with a wire center is quoted by a leading producer at $22 per 1,000 ft. for No. 6 and $27. for No. 8 in coil lots.

Scrap Steel Market Declines During Past Month

Under Prevailing Prices Dealers Are More Anxious to Buy than Holders to Sell—Railroads Withdraw Lists

During the past thirty days prices of scrap iron and steel materials have been forced still lower than the prices quoted the last of March. Machine shop turnings have shown no change, holding at 5½ to 6 cents in net tons at Chicago, but other materials have receded from ½ cent to 2½ cents.

Prices quoted at Chicago now, in net tons, show No. 1 cast to be off ½ cent to 14-14½ cents; No. 1 R.R. wrought is down one cent to 10½-11 cents; No. 2 is down a cent to 9½-10 cents. Steel springs show a 1½-cent drop to 12-12½ cents; old steel axles have come down ½ cent to 14-14½ cents, while old iron axles have dropped 2½ cents to 24-25 cents.

For gross ton lots at Chicago, quotations are off one-half cent on car wheels to 13½-14 cents; R.R. malleable is lower by three-quarters cent to 14.75-15.25 cents and frogs, switches and guards have dropped one cent to 11-11½ cents. In the rails, old iron rails fell one-half cent to 17-17½ cents, old steel shorts fell one cent to 12-12½ cents and rerolling steel rails are lowered one and one-half cents to 11½-12 cents.

With these so-called low prices ruling at which dealers will consider buying, sellers are not anxious to get rid of their scrap as there is a feeling that an upward turn in the market is not far distant. Many buyers, on the other hand, are taking lots here and there in anticipation of a rise in market. Some railroads which had placed lists of scrap materials in the market have withdrawn these lists on hearing of the prices prevailing. Still other lists have gone through. Although buying has been light there is a better feeling in the trade since the leveling of steel prices two weeks ago. There is a reported scarcity in New York of steel car axles.

Asphalt About $8 per Ton Lower than 1920 Peak

Producers Feel that Quotations Are Close to Bottom—Good Stocks Are Held with Prompt Shipments

Prices of asphalt have hit bottom, according to the view of representative producers. The market on natural asphalt delivered hot in tank boats ranges from $33 to $35 per ton and for asphalt delivered cold in barrels from $33 to $36 per ton. On Mexican asphalt the quoted price in a representative instance is $22 per ton f.o.b. plant. The above prices represent decided reductions from the peak prices of 1920, which on natural asphalt ranged from $41 to $44 per ton. Prices have now held steady for nearly two months.

Stocks of the finished product with producers are fairly large, too much so in some instances. As a consequence immediate deliveries are generally quoted. Shipments of the raw product are prompt, the shortage which was existent last year under transportation difficulties having disappeared. Crude asphalt prices have declined somewhat as reflected in the finished product.

The volume of buying on the part of electric railways this spring has been below the level of other years, though in certain large communities there is a fair amount of activity. Demand on the part of municipalities for paving work of course represents the bulk of the buying, but the present year apparently will not quite come up to normal in that quarter either. There is a distinct tendency to hold off on making purchases and on that account producers expect business to improve this summer.

Lower Prices on Tubular Steel Poles

Recent Reduction in Steel Anticipated in Pole Prices Though Little Increased Buying Has Resulted

Inquiries in the market for tubular steel poles are numerous, it is stated, but there have been very few actual orders placed by electric railways this year. There has been some buying of combination railway and lighting poles, however, the main factor there being the insistence of merchants and municipalities that these orders be placed so as not to delay street improvement work. Several large railways have made inquiries covering their year's requirements on poles, but reluctance to buy has generally been shown because of expectations of price reductions.

In this connection an attempt has been made to check up the effect which recent price reductions on standard pipe and other steel products by the Corporation may have had upon tubular pole prices. One of the leading interests in this market states that it does not always follow that a reduction in standard pipe prices affects the selling price of poles, as on the latter product each sale is a transaction by itself so far as delivery and price is concerned. The price question in this instance is therefore left unanswered. Another large producer, however, made a decrease of $15 per ton on steel poles during February, and this cut, it is stated, more than anticipated the recent drop in the price of pipe of which poles are made. Therefore no additional reduction is contemplated from this source before the beginning of the third quarter, and no decrease will be made then unless steel prices undergo another decline.

Although present deliveries in this line are good, with shipments ranging from sixty to ninety days, prospects for improved buying are uncertain, according to producers. The view is expressed that electric railways will hardly purchase poles this year unless forced to do so by franchise conditions or extensions ordered by city councils.

Austria Asks for Car Bids in this Country

The United States Bureau of Foreign and Domestic Commerce, Washington, D. C., reports that quotations by cable are requested from Austria for twenty-four street cars, of which twelve are to be equipped with motors and twelve are to be operated as trailers. Seating capacity of the cars is to be six-

teen persons, with standing room on the front platform for eight people and on the rear platform for ten. The distance between the rails is 1,445 millimeters and between the wheels 1,440 millimeters. Further information about the cars, which it is stated are urgently needed, can be obtained from the bureau or its district offices by mentioning 34,743 as a reference number.

Stranded Steel Wire Prices Follow Steel Down

Shipments Maintaining an Even Pace, but There Is Only a Small Volume of Orders

Activity in the market for stranded steel wire is not very marked at present. New construction work is not large in any field apparently, at least the volume of orders for this class of material does not show it. Shipments are being made right along, it is true, but there is no volume to the demand. A leading producer reports that orders for the first three months of this year maintained an even pace or about a million and a half feet of stranded wire shipped from New York City territory, though only about one-quarter of this was for construction work. One of the large manufacturers in this field has been out of the market altogether for the past six months, the inference being lack of buying activity.

Stocks of the finished product are large at factories, and immediate shipment can be made on common sizes. Prices on stranded steel wire declined recently in view of the drop in steel quotations. The reduction, it is reported, amounted to 10 to 15 per cent, or expressed in exact figures, $5 per ton with a representative producer.

$225,000 Loss in Pacific Electric Railway Fire

Fire of mysterious origin on April 20 completely destroyed the Pacific Electric Railway's divisional carhouse and shops at Redondo Beach, Cal., with an accompanying loss of $225,000. Besides the complete loss of the combination one-story brick structure serving as carhouse and shops, which covered half a city block, rolling stock consisting of seven of the company's heavy-type interurban cars, one city-type car, one line car, one electric freight locomotive, one box car, one flat car and one steel flat car was entirely destroyed. Several other cars were damaged; though the prompt removal of gasoline tank cars stored near by prevented more serious loss. The fire also destroyed a vast quantity of expensive repair material stored at the shops. Of the total loss sustained $150,000 was covered by insurance.

Electrification in Zanzibar

Along with extensive improvements to Zanzibar Harbor, extending over the next three years, one of the projects mentioned is a narrow-gage electric railway to run the length of the island, according to Guaranty Trust Company.

Standardization Being Discussed by Gear Manufacturers

The fifth annual meeting of the American Gear Manufacturers' Association is being held in the Hotel Sinton, Cincinnati, Ohio, April 27, 28, 29 and 30. Standardization and uniform cost accounting will be among the subjects discussed, and important action is expected by the association tending toward the establishment of a more complete standardization of the products of the gear industry.

According to the program that has been prepared G. M. Bartlett of the Diamond Chain & Manufacturing Company will discuss "The Ideal Chain and Sprocket Drive"; A. R. Mitchell of the Andrews Steel Company will speak on "Industrial Gears from the User's Standpoint"; J. B. Foote, president Foote Brothers' Gear & Machine Company, has been assigned "Worm Gearing," and J. B. Doan, president American Tool Works, has an unannounced subject.

Thirty-Mile Line Projected in China

According to the Guaranty Trust Company an electric railway line from Siangtan to Changsha, China, a distance of 30 miles, is under consideration. Plans include the possible purchase of fifteen cars.

Rolling Stock

Southern Pacific Company is expecting delivery of twelve new passenger coaches about May 12 to be placed in service on the Portland-Corvallis division about the middle of July. The cost of the cars, it is stated, is $37,000 each. The new equipment will provide surplus cars for emergency operation and to take care of excursion travel.

Detroit (Mich.) Municipal Railway, mentioned in last week's issue as placing an order for twenty-five safety cars, has issued the following information and specifications on these cars:

Number of cars ordered	25
Date of order	April 15, 1921
Date of delivery	June 16, 1921
Builder	Osgood-Bradley Car Company
Type	18 ft. safety
Weight, total	16,800 lb.
Interior trim	Cherry
Air brakes	Westinghouse DH-16
Bumpers	O. H. 6-in. rolled channel section
Car signal system	Faraday
Car trimmings	Statuary Bronze
Control	K-63
Curtain fixtures	Curtain Supply Company
Curtain material	O'Bannon double-coated, diced
Designation signs	Keystone, glass back
Door operating mechanism	Safety Car Devices Company
Heater equipment	Cutler-Hammer, truss plank
Headlights	Golden Glow, HDB-96
Lightning arresters	Westinghouse
Motors	Westinghouse, 508
Paint	Sherwin-Williams, Old Dutch, oil enamel
Registers	International, type R-10
Sanders	Osgood-Bradley
Sash fixtures	J. L. Howard & Company
Seats	Reversible slat, cherry
Step treads	Feralun
Tail lights	Nichols-Lintern Duplex indicating
Trolley catchers or retrievers	Ohio Brass
Trolley base	Ohio Brass, form No. 1
Trucks	Osgood-Bradley, 25-96

Track and Roadway

Los Angeles, Cal.—Construction of a tunnel to relieve the downtown congestion of Los Angeles, Cal., has been started and will have a considerable effect on street car travel. The bore is known as the Second Street tunnel and will run from Hill to Figueroa Streets, a distance of 1,502 ft. Car tracks have been removed from Second Street.

Detroit (Mich.) Municipal Railway.—Contract for furnishing 11,200 tons of steel rails and special work for the Detroit Municipal Railway has been awarded to the Lorain Steel Company, the only bidder on the entire equipment for which bids were recently opened. The excavation work and construction under way and contemplated by the commission are being rushed.

St. Paul City Railway, Minneapolis, Minn.—The St. Paul City Railway is to begin its 1921 paving program between the tracks at once. This proposal was accepted by the City Council. This is a matter that has been held in abeyance for a long time owing to the company's inalibity to finance the work, and even now the money will be taken from sums laid aside for other purposes. This will provide for a beginning until other funds are available.

Fort Worth, Texas.—The City of Fort Worth, Texas, has made a guarantee to the Federal Government that a car line will be built and put in operation to Lake Worth, the city resort about nine miles northwest of the city. This pledge was made to comply with one of the conditions incident to the selection of the proffered site at Lake Worth for the Soldiers' Rehabilitation Hospital to be built by the Government.

Oil Fields Electric Railway, Eastland, Tex.—An extensive system of interurban electric railways is to be built in this part of the State by the Oil Fields Electric Railway, being organized by W. Y. Fleming and associates. Preliminary surveys have been made for a line to run from Fort Worth to Cisco, through Graham, Breckenridge and other towns. Another line is to run from Wichita Falls to Abilene, through Stephenville and Brownwood. A branch line will run from Caddo to Ranger, thence through Eastland to Cisco. From Ranger a branch line will be built to Desdemona. From Cisco, lines will go to Hilburn, Rusing Star, May and on to Brownwood. Another line from Cisco will run through Putnam and Baird to Abilene. From Caddo a main line will be run to Breckenridge and will branch off to Eliasville, through Ivan, from Eliasville to Graham and from Graham to Loving, Archer City to Wichita Falls. The principal office of the company will be at Eastland.

Olympia Light & Power Company, Olympia, Wash.—The Olympia Light & Power Company expects to replace three miles of plate joints with continuous rail joints on the present 40-lb. rail.

Seattle (Wash.) Municipal Street Railway.—The utilities committee of the City Council has made a tentative decision to recommend several extensions of the Seattle Municipal Street Railway, and D. W. Henderson, superintendent, has been asked to submit new estimates on the cost of extending the Beacon Hill line to Chicago Avenue, the Alki line and the Fifteenth Avenue and Cowen Park lines. It is the intention of the committee, if favorable action is decided upon, to recommend the sale of utility bonds, and if the bonds are not readily disposed of, to give residents of the district served an opportunity to subscribe to the issues.

Willapa Electric Company, Raymond, Wash.—The Superior Court of Thurston County on March 31 reviewed the order of the Public Service Commission of Washington, requiring the Willapa Electric Company to construct and maintain an extension of its railway. On April 4 the court ordered that the order of the commission be set aside. The requirement of the commission that the railway build certain extensions was referred to in the ELECTRIC RAILWAY JOURNAL for March 5, page 474.

Power Houses, Shops and Buildings

Berlin (N. H.) Street Railway.—The Berlin Street Railway within the next month will build a new carhouse.

Charleston Interurban Railway, Charleston, W. Va.—The Charleston Interurban Railway has purchased nearly an entire block of city property and is planning the erection of a modern terminal. T. S. Clark, attorney for the company, states that the company has outgrown its present station and that the new improvement will tend to eliminate a lot of congestion which prevails under the present system of operating cars.

Cincinnati (Ohio) Traction Company.—Bids for electrical equipment of substations which will be built by the Cincinnati (Ohio) Traction Company, before the contract for power with the Union Gas & Electric Company becomes effective were submitted to the office of the Director of Street Railways, recently for approval. The Westinghouse Electric Company bid $380,000 while the General Electric Company asked $409,925. It is planned to have the substations ready for operation on Sept. 1. There will be seven substations —Price Hill, Norwood, Hartwell, Chester Park, Cumminsville, Depot Street and Twelfth and Walnut Streets.

Professional Note

The Harry M. Hope Engineering Company, Boston, Mass., has established offices in the Dominion Express Building, Montreal, to handle its Canadian business. George W. Saunders, formerly with S. Pearson & Sons, London, is Canadian manager.

Trade Notes

The Rome Wire Company, Rome, N. Y., has added weatherproof wire to its manufacturing schedule, and its new weatherproof wire mill is now completed and in operation.

The Green Fuel Economizer Company about May 1 will move its general sales office and engineering department from 90 West Street, New York City, to the factory at Beacon, N. Y. The New York sales office will remain at 90 West Street, and Mr. Brinkerhoff will continue in charge.

The Esterline Company, Indianapolis, manufacturer of graphic recording instruments, announces the appointment of Walter W. Gaskill, 141 Milk Street, Boston, as New England representative of the company.

The Stoker Manufacturers' Association, J. G. Worker secretary, Phoenix Manufacturing Company, Eau Claire, Wis., has changed the date of its annual meeting to June 14, 15 and 16 at the Red Lion Inn, Stockbridge, Mass.

The Batterman-Truitt Company, 736-8 West Monroe Street, Chicago, has negotiated a lease covering additional floors in the Gordon Building, 730-38 West Monroe Street, tripling its facilities and equipment for the manufacture of ventilating fans and blowers.

Morton Manufacturing Company, Chicago, Ill., announces the appointment of Frank N. Grigg as southeastern sales manager, with offices at 630 Louisiana Ave., Washington, D. C., to handle the sale of the company's entire "Acme Line" of railway appliances. C. H. Kadie, formerly master mechanic of the Southern Railway, is associated with Mr. Grigg as sales representative.

American Di-Electrics, Ltd., New York City, manufacturers and engineers in the field of insulation, are moving to larger quarters at 71-73 West Broadway on May 1. John P. Rockwood, metropolitan distributer, is also moving to the same address. The change will enable the company to enlarge its lines and deal in all kinds of insulation in addition to those produced in its own factories. The company's Pittsburgh agent, the Electrical Engineering & Manufacturing Company, has also recently moved to larger quarters at 907-909 Penn Avenue, Pittsburgh.

Sanford Riley Stoker Company, Worcester, Mass., announces that the sales management for Riley underfeed stokers and Murphy furnaces has been concentrated under one head. William Pestell, formerly Western sales manager with headquarters at Chicago, now becomes sales manager with headquarters at 1226 Woolworth Building, New York City. W. L. Bigelow becomes district manager of the Pittsburgh territory, while C. Lincoln Smith goes to Cincinnati in the same capacity. To serve better the territory in and around Kansas City, the F. M. Beeson Machinery Company, 308 Mutual Building, Kansas City, has been appointed sales agent for both Riley stokers and Murphy furnaces. Sales in Denver territory will be handled by the Stearns-Roger Manufacturing Company, 1718 California Street, Denver. The Boston, Buffalo, Cleveland, Detroit, Chicago, and St. Paul offices remain unchanged.

New Advertising Literature

Pumps.—"Ten Years' Progress in Water Works Pumps" is a 100-page publication of the De Laval Steam Turbine Company, Trenton, N. J.

Stokers.—The Files Engineering Company, Inc., Providence, R. I., is distributing a sixteen-page booklet covering its hand-operated Files stokers.

Bond Welder.—The Ohio Brass Company, Mansfield, Ohio, as general distributer, is circulating a folder on the Wilson Plastic-Arc Rail Bond Welder.

Steam Turbines.—General Electric Company, Schenectady, N. Y., has issued bulletin No. 42,201-B, superseding No. 42,201-A, on Curtis steam turbines of 100-kw. to 3,500-kw. capacity.

Outdoor Switching.—"The Skeet Switch and Skeet Transformer Station," an eighteen-page publication has been issued by T. J. Johnson, Jr., Electric and Gas Building, Atlanta, Ga.

Hydraulic Valves.—Bulletin No. 52 has been issued by the Wellman-Seaver-Morgan Company, Cleveland, entitled "The W-S-M Balanced Plunger Hydraulic Valve," a new product developed by the company.

Wood Block Floors.—The Jennison-Wright Company, Toledo, Ohio, has issued a booklet describing and picturing installations of "Kreolite" wood flooring blocks for machine shops, car shops, loading platforms, roundhouses, etc.

Commercial Possibilities in Africa.—National Foreign Trade Council, Hanover Square, New York City, has issued for distribution a booklet dealing with the "Commercial Possibilities of the Union of South Africa."

Hammer Drill.—Chicago Pneumatic Tool Company, 6 East Forty-fourth Street, New York City, has issued bulletin 639, on its BQ-46 Hammer Drill which is primarily adapted for demolition work such as removing pavement along rails and between ties.

Foundry Practice.—The Farrell-Cheek Steel Foundry Company, Sandusky, Ohio, has just issued a complete handbook on foundry practice which describes and illustrates each operation required in making a casting, the same casting or pattern being used throughout.

Fire Fighting and Safety Devices.—American-La France Fire Engine Company, Inc., Elmira, N. Y., manufacturer of fire-fighting equipment and safety devices, has issued edition No. 6 of its 205-page catalog on "Fire-Fighting Equipment, Accessories and Supplies," and also edition D of its catalog specifically devoted to safety devices.