Electric Railway Journal

12636

Volume XLVIII

July to December, 1916

McGraw Publishing Company Inc. 239 West 39th St., New York City

ING OF THE INDI

TTF.

Instructions for Use of Index

This index is essentially a subject index, not an index of titles, and articles treating a number of different subjects are indexed under each subject. In addition, a geographical reference is published wherever the article relates to any particular railway company, or to the State matters of any particular The geographical method of grouping serves to locate in the index any article descriptive of practices, conditions, events, etc., when the searcher knows the electric railway, city or State to which the article applies. Groupings are made under the name of the city in which the main office of the company is located, but an exception is made in the case of electrified sections of steam railroads, such entries being made direct under the name of the railroad. City or State affairs appear direct under the names of the city or State involved.

In the subject index, the alphabetical method is followed, and if there is a choice of two or three keywords the one most generally used has been selected, cross references being supplied. Below will be found a list of the more common keywords used in

the index. This list has been subdivided for convenience into sixteen general subjects, but the general subject headings, shown in capital letters, do not appear in the body of the index. As an example, if a reader wished to locate an article on power-driven tower wagons he would obviously look in the list under the general subject "vehicles," and of the two keywords that appear under this caption, only "Service and tower wagons" could apply to the article in question. The reader would therefore refer to this keyword under "S" in the body of the index.

In addition to the groups of articles covered by these headings the papers and reports from railway associations and technical societies are grouped under the names of the various organizations. Proceedings of other associations are indexed only in accordance with the subject discussed. Short descriptions of machine tools appear only under the heading "Repair Shop Equipment" and are not indexed alphabetically, because of the wide choice in most cases of the proper keyword.

CLASSIFIED LIST OF KEYWORDS

ACCIDENTS AND LEGAL

Accidents (including wrecks)
Accident claim department
Legislation
Legal
Public service and regulative
commissions
Public service corporations
Safety-first movement

CARS

Car design
Cars (descriptive)
Cleaning of cars
Gasoline cars
Lubrication
Heating of cars
Lighting of cars
Storage battery cars
Tower cars
Ventilation of cars
Work and wrecking cars

CAR EQUIPMENT

Axles
Bearings
Brakes
Controllers and wiring
Couplers
Courrent-collecting devices
Doors, seats and windows
Fenders and wheel guards
Gears and pinions
Teadlights
Totors
Tucks, car

EMPLOYEES

ees ind arbitrations

FARES

aust

: 213 collection (including ap-

FINANCIAL AND STATISTICS

Accounting
Appraisal of railway property
Financial
Franchises
Maps
Operating records and costs
Statistics
Traffic investigations

HEAVY ELECTRIC TRACTION
Heavy electric traction (general)
High-tension d.c. railways
Interurban railways (general)
Locomotives
Low-tension d.c. railways
Single-phase railways

MAINTENANCE OF EQUIPMENT

Cleaning and washing of cars
Inspection of cars
Maintenance records and costs
Paints and painting
Repair shop equipment
Repair shop practice
Repair shops
Tests of equipment
Welding, Special methods

OPERATION

Carhouses and storage yards Multiple-unit trains Operating records and costs Passenger handling records Schedules and time tables Signals Stopping of cars Train operating practice

POWER

Boilers and equipment
Cables
Energy consumption
Feeders
Overhead contact system
Poles
Power distribution
Power generation
Power stations and equipment

Purchased power Substations and equipment Third-rail contact system Transmission lines Turbo-generators and equipment

RECORDS

Maintenance records and costs Operating records and costs Passenger handling records Record forms

STRUCTURES

Bridges Carhouses and storage yards Fower stations and equipment Repair shops Terminal stations and terminals Waiting stations

TRACK

Pavement
Rail joints and bonds
Rails
Special work
Ties
Track construction
Track maintenance

TRAFFIC

Freight and express Public, Relations with Publicity Routing of cars Traffic investigations Traffic stimulation

VEHICLES (not on tracks)

Motor buses Service and tower wagons

MISCELLANEOUS

Fire protection and insurance Lightning protection Loading limits for cars Manufacturing conditions Municipal ownership Public, Relations with Standardization Storerooms Timber preservation

INDEX TO VOLUME XLVIII

INDEX	IO VOLUME	LALVIII
PAGES BY WEEKS	Accountants' Association:	American Electric Railway Assn.: (Continued)
July 1 1 to 44	Convention: (Continued) Proceedings, *814; Comment, 755	Convention: Attendance, 887
July 8 45 to 86	Program, 496; Comment, 475; Changes, 538	Committee reports: Aera advisory, 811
July 15 87 to 128	Co-operation in accounting matters [Wilson], 1024	Anthony N. Brady medal, 362, 806 Award of company section medal,
July 22 129 to 168	Accounting: —Clearing house plan for interline traffic ac-	806 Company membership, 806
July 29 169 to 212	counts [Kascmeier], 1250 —Continuous inventories:	Company sections and individual
Aug. 5	Simplifications [Carver], 818	membership, 808 Compensation for carrying U. S.
Aug. 19	Use of property ledger, *815 Value and method of preparation [Car-	mail, 807 Constitution and by laws, 811
Aug. 26	ver], *1053 Inconsistencies and fallacies in [Dunn],	Cost of passenger transportation service, 806
Sept. 2 383 to 426	*775; Discussion [Forse], 937; [Wilson], 1024	Electrolysis, 806 Federal relations, 805
Sept. 9 427 to 474	Light and power accounting in relation to railway work [Dedrick], 1300; Com-	Good Roads Congress, 805 Operation of motor vehicles, 812
Sept. 16 475 to 520	ment, 1281 —Obsolescence, Burden on future generations,	Overhead and underground con- struction (National Joint Com-
Sept. 23 521 to 560	Comment, 87 —Sinking fund accounting [Forse], 528;	mittee), 805
Sept. 30 561 to 704	Comment, 521 —Storeroom accounting methods [Bulkeley],	De-ammendations in provident's 2d-
Oct. 7	*101	dress, 813 Social relations, 809; Special sub- committee, *879; Comment, 861 Standards for car loading, 812
Oct. 14	Uniformity in accounting classifications ["Accountant"], 979	Standards for car loading, 812 Taxation matters, 812
Oct. 28	—Uniform system of accounts, Questions and answers, 1078	Valuation, 806
Nov. 4 959 to 1002	Value of accounting in modern industry [Wildman], *793 Advertising. (See Publicity; Traffic stimula-	Company section exhibit, *867; Com-
Nov. 11	Advertising. (See Publicity; Traffic stimula- tion)	Entertainment committee, additional members appointed, 682
Nov. 18	Akron, O.: Northern Ohio Tr. & Lt. Co.:	Entartainments n 850
Nov. 25	Notice of the control	Papers [Baker], 804, [Kealy], *762; [Leach], 813; [Lce], 809; [Sprague], *771; [Wilson], 804;
Dec. 2	Conductor's adjustable scat, *942	Comment, 754
Dec. 9	Election of new officers, 1173 Improvements for old-style trucks and brake rigging, *986 Interurban all-steel passenger cars, *1050 Provinced extensions of improvements	President's address [Henry], *756 Proceedings, *802; Comment, 754
Dec. 23	Interurban all-steel passenger cars, *1050	Proceedings, *802; Comment, 754 Program, 280; Comment, 475; Changes,
Dec. 30	for 1917, 1361	538 Special train schedule, 498
	Sand-blasting of glass, *986 Sale of company, 418	Eight-hour law, Activity in obtaining ex- emption clause, 404, 461
A	Albany, N. Y.: —Albany Southern R. R.:	— Election of officers, 813 — Hearing on clearance and hours of service
Academy of Political Science:	Annual report, 854 —Union Traction Co.:	bills, 25 —Manufacturers as members:
Addresses on public utility labor disputes, 1106, Comment, 1139	Different uses of pneumatic tamping outfits [Brennan], *1118	Dues, 895 List of new members, 191, 361, 1349
Acceleration (see Tests of equipment) Accident claim department:		Membership [Henry], *757; Comment,
Accident prevention, Work of claim de- partment in Tacoma, Wash. [Browne], *348	denied, 62; Comment, 45 Rebuilding of old type car bodies, *980 Single truck care for belt line service	Reasons for, Comment, 664
-Accidents, proposed classification, 819	Single-truck cars for belt line service, *71 Strike, 741	Relations with parent association, Com- ment, 1
	Albia, Ia.:	American Electric Railway Claims Ass'n. (see
Boston Elevated Ry., Burdens of increased	Albia Interurban Ry.: Reorganization, n 511	Claims Association) American Electric Railway Engineering Ass'n.:
Claim work principles [Walch], *877;	Albuquerque, N. M.: —City Electric Co.:	—Committee appointments, 1206, 1252 —Committee meetings:
——Appraisal of damaged property in Seattle, Wash. [Hamilton], 350 ——Boston Elevated Ry., Burdens of increased accident liability, 721 —Claim work principles [Walch], *877; [Rice], *878 —Code of ethics and policies of Pittsburgh (Pa.) Rys., 712; Comment, 706 ——Damage expense figures, St. Louis, Mo., n 1318	Ultra-light design of car, *591 Allentown, Pa.:	Block signals, 1350 Buildings and structures, 362
—Damage expense figures, St. Louis, Mo.,	Lehigh Valley Transit Co.: Cars of center-entrance, all-steel type	Electrolysis, 235
-Fair play between claim agents and public,	[Fehr], *896 Circulating water pump attachment for	Equipment, 1252 Power generation, 1350
Comment, 2; [Carson], 105; [Bennett], 147	air compressor [Branson], *542 Mounting of lamps for pit lighting, *545	Standards, 191, 235, 1252, 1349 —Committee work, Improved arrangements
Fundamentals of claim work [Boynton],	Shop reports kept by punch system [Branson], *454 Wheel lathe with special face-plate	[Phillips], 1115 ——Convention:
Illinois Traction System's claim department [Whitmore], 1159	Wheel lathe with special face-plate lugs, *984	Committee reports: Block signals, 826
Regulation of motor vehicle traffic to re-	Altoona, Pa.: —Altoona & Logan Valley Elect. Ry.:	Buildings and structures, 835 Electrolysis, 836
duce accidents [Falknor] 349. [Win-	Advantages of near-side stop [Hare],	Engineering-Accounting, 815 Equipment, 833
sor], *874; [Brown], 876 —Relation of claim department to public [Lonergan], 310	American Electric Railway Accountants' Ass'n. (see Accountants' Association)	Heavy electric traction, 836 Power distribution, 823
-Steam railroad claim work [Lec], 309 Accidents:	American Electric Railway Ass'n.:	Power generation, 828 Standards, 826
-Boston, Mass., Drawbridge accident, n 1034.	— Committee appointments, 1302 —Committee meetings:	Transportation-Engineering, 827
*1102, 1146; Comment, 1048; Safe- guarding of drawbridges [Johnson], 1339; Comment, 1327	Convention entertainment, 146, 361, 496 Electrolysis, 235	Way matters, 830 President's address, *822 Proceedings, *822, 894; Comment, 754 Program, 496; Comment, 475; Changes.
——Cleveland, Ohio, bridge destroyed by rnn- away car, *723 ——Pennsylvania accident statistics, 1178	Executive, 1302 Mid-year conference, 1023	Program, 496; Comment, 475; Changes.
Pennsylvania accident statistics, 1178 Accountants' Association:	Subjects, 146 Valuation, 498	—Election of officers, 836
Committee appointments, 1162	—Committee work, Comment, 523, 1047 —Company sections:	— Nomination of officers, 361 — Subject assignments for 19 6.45.7, 1063
Committee meetings: Executive, 191	Capital Traction Co., 935, *1303, 1304 Chicago Elevated R.R., 894, 1023, 1162,	American Electric Railway Amatacturers Ass'n.:
Committee reports:	1303, 1351 Connecticut Co., 66, 895, 1023, 1162,	—Convention activities, 848 12 constant American Electric Railway in Francisco &
Accounting definitions, 814 Claims Accounting, 819	1253, 1304 Denver Tramway, 935, 987, 1207, 1304	Traffic Ass'n.: Ally beard and
Engineering-Accounting, 815 Standard classification of accounts,	Manila, P. I., 235, 402, 538, 1023, 1207, 1253	Committee appointments; 186
Comment, 755	Milwaukee. 198, 895, 935, 1207, 1350 Newport News, 978, 1253, 1304, 1351	Cost of rush hour ser 4.36, 1200 Percentive, 1052 Fares and transfers, 146 A
Papers, [Benton], *782; [Dunn], *755;	Portland, Ore., 1451 Public Service Ry., 935, 978, 1062, 1095,	Schedules and time ables, 135000
Comment, 755 Election of officers, 820 Papers, [Benton], *782; [Dunn], *755; [lones], *777; [King], *797; [Steuart], *779; [Wildman], *793 President's address, *814	*1303, 1351 Washington Ry. & Elect. Co., 935, 1062,	——Committee work, new plan for, 1252; Com-
	1162, 1304	ment, 1282
(A	bbreviations: * Illustrated n Short news ite	m.)

1 16 1

American Electrie Railway Transportation & Traffic Assn.: (Continued) Boston, Mass.:

Bay State Street Ry.: (Continued) Automatic stops: -Boston, Mass., Test of derailing device, Fate Street Ry.: (Continued)

Fare case decision contains encouragement [Observer], 683

Freight service plan approved by commission, n 1039

Lowell extension not required by commission, n 698

One-man car approved by commission, n 911

Park sale authorized by commission, n 1361

Rail-grinding practice (Seymour), *30 Convention:
Committee reports:
Block signals, 826
Claims-1 ransportation, 839
Company publications, 846
Cost of rush-hour service, 842
Express and freight traffic, 844
Fares and transfers, 843
Passenger traffic, 840
Schiedules and timetables, 838
Standards, 838
Transportation-Engineering, 827
Uniform definitions, 841
Papers [Braden], *791; [Bradley], *768; [Carraway], *792; [Doneckerl, 795; [Hild], *787; [King], *797; [Wheelwright], *789
Prostignity address, *837
Program, 497; Comment, 475; Changes, 538
Proceedings, *837; Comment, 754

Executive committee adopts changes in constitution, 362
—Subject assignments for 1916-1917, 1063
merican ludustrial Commussion's activities, 381 Convention: *1202

—Drawbridge safety stopping devices, *1102; [Strauss], *1210

—To be developed by special department on New Haven R.K., n 24

Automobiles, Adaptation to track operation in southern California, *285; Comment, 300

Automobile tower wagon practice on Union Ry. (N. Y. City), *90; Comment, 89

Automobile trucks, Uses and design of (White), *152

Ayles: n 911
Park sale authorized by commission, n 1361
Rail-grinding practice (Seymour), *30
Wage agreement, n 693, 1072, n 1125
Boston & Maine R.R.:
Financial statement, 1037
Boston Elevated Ry.:
Annual report, 948
Center-door steel motor-cars, *263
Changes in personnel of organization, n 1361
Commission's order for new cars and track work, n 162
Commission's service investigation, n 513
Company not liable for acts of employees off duty, n 351
Defense of city ownership with private operation, 1201
Drawbridge accident, n 1034, n 1074, *1102; Comment, 1048
Drawbridge accident, n 1034, n 1074, *1102; Comment, 1048
Drawbridge safety devices, Proposed types, *1102, *1202
Drawbridge safety devices, Proposed types, *1102, *1202
Drawbridge safety regulations, 1146
Financial relief sought before legislative committee, n 248, *671, 721, n 741, 852, n 991, 1077, 1201, n 1219, 1267; Comment, 665, 1168
Freight service plan before commission, n 995; n 1039
Handling of baseball crowds, n 910; Comment, 1089
Near-side stop, Advantages of [Reynolds], *872
Presidency changes hands, 555, n 548; Comment, 521
Psychology and economical habits [Bancroft], 1289
Safety kits provided for employees, n 290
Storage yards and station improvements to accommodate increased traffie, Axles:

—Button-end axles, Repair practice in Long
Island R.R. shops [Mills], *193

—Button-end axles reduce wear [Graham],
278 278
-Modern practice, 634
-Report of A. E. R. A. committee on equipment, 833
-Testing of axles, Anderson, Ind. [Hemming], *1025, n 1114 Proceedings, *837; Comment, 754

Executive committee adopts changes in constitution, 362

—Subject assignments for 1916-1917, 1063
American Industrial Commission's activities, 381
American Institute of Electrical Engineers:

—Annual meeting at Cleveland, O., 65 '.

American Rays. (see Philadelphia, Pa,) '. '.

American Railway Ass'n.:

—Prevention of accidents at grade crossings, *270

American Railway Engineering Ass'n.:

—Rail-joint mechanical tests, *940

—Treatment of fence posts, 498
American Society of Mechanical Engineers:

—Design of electric locomotives, [Batchelder], 977; [Quereau], 1203

American Society for Testing Materials:

—Elastic limit defined, 23; Comment, 1

Anderson, Ind.:

—Union Traction Co.:

Accounting inconsistencies and fallacies [Forse], 937

Enameling vs. painting and varnishing of cars [Hemming], 1208

Financial statement, 696

Grand County fare case, n 80

Headlight practice and tests [Hemming], *1354

Sinking fund accounting [Forse] 528; Comment, 521

Testing axles for defects [Hemming], *1025, n 1114

Unit for track maintenance costs [Mitchell], 403

Work car with large cab, *150

Appraisal of railway property:

—Bay State fare case, Commission's final ruling, 444; Comment, 428

—Continuous inventories (see Accounting)

—Definition of twenty-one valuation terms, 807

—Depreciation and reserve fund calculations [Loebeustein], *1057 Bakersfield, Cal.:

—Bakersfield & Kern Elect. Ry.:

Jitney buses operated by company lose money, 39

Baltimore, Md.:

—United Rys. & Elect. Co.:

Circular showing increase in company's service and decrease in value of the nickel, *279

Insurance plan for employees adopted, 79

Service order complied with, n 40

Tracks in residential section made attractive, *142

Traffic conditions explained to commission, n 221

Vestibuling open-platform cars, *302;

Comment, 299

Wage increase, n 740

—Washington, Baltimore & Annapolis Elect. R.R.:

Catenary construction, Reinforcement of splices [Harding], *684

Baltimore & Ohio Ry.:

—Reminscences of electrification of belt-line [Kennedy], 26

Bangor, Me.:

—Bangor Ry. & Elect. Co.:

Strike, n 414, n 463, n 508

Wages increased, n 373

Bay State Street Ry. (see Boston, Mass.)

Bearings:

—Babbitting jig for armature bearings В n 290 Storage yards and station improvements to accommodate increased traffic, *258 Subway extension put in operation, n 1216
Track reconstruction work, *942
Transfer case hearing, n 1272
Wage agreement, n 75, 154; Comment, n 130
Wood preserving plant of pressure type
[Bright], *1065
—Boston & Worcester Street Ry.:
Bronze inserts used for armature bearings [Blanchard], 1305
Car inspection record system [Blanchard], *1352
Financial statement, 1036
Reduction of hot boxes, Boston, Mass.
[Blanchard], *1212
Bowling Green, O.:
—Lake Erie, Bowling Green & Napoleon Ry.
Commission without jurisdiction to prevent abandonment of line, 697
Brakes: Bay State Successions
Bearings:

Babbitting jig for armature bearings
[Brown], *1116

Babbitting practice in New York City
[Johnson], *237

Ball bearing journal boxes [Bruenauer],

*541

Browge inserts for armature bearings, Boston armature bearings Ball bearing journal boxes [Bruenauer],

*541

Bronze inserts for armature bearings. Boston, Mass. [Blanchard], *1305

Elimination of loose armature bearings in Kansas City Ry. shops, *369

Reduction of hot boxes, Boston, Mass. [Blanchard], *1212

Roller bearings applied to electric hoists (Economy Engineering Co.), *690

Beaumont Traction Co.:

Wage increase, n 509

Beaver Valley Tr. Co. (see New Brighton, Pa.)

Benton Harbor, Mich.:

Benton Harbor, Mich.:

Benton Harbor or stock room, *323

Center door cars, *366

Portable air compressor for shop use,

*544

Rail grinder made of scrapped materials, *545

Berkshire Street Ry. (see Pittsfield, Mass.)

Binghamton, N. Y.:

Binghamton, N. Y.:

Binghamton Ry.:

Service improvements to stimulate traffic, *709

Boilers and equipment:

Holyoke (Mass.) Street Ry., Steam producing equipment of power station, *1190

Increasing capacity of return-tubular type (United Furnace Corp'n), *1309

Stokers:

Modern practice in mechanical stoking Depreciation and reserve fund calculations [Loebenstein], *1057

Field work and preparation of appraisal data [Kuhn], *315

Inventorics should be classified for appraisal use [Betts], 1052

Maine Commission's book appraisal of Lewiston, Augusta & Waterville Street Ry, for rate making, *180

Minneapolis (Minn.) Street Ry, valuation figures, 902

Obsolescence, Burden on future generations, Obsolescence, Burden on future generations, Comment, 87 Brakes:

Brake valve with safety features for one man cars (Safety Car Devices), *405

Energy saving by efficient braking [Arthur], 397; Comment, 385 Comment, 87

-Overhead charges in Bay State Street Ry. fare case, 311

-Overhead charges in valuation work [Kealy], *762

-Planning appraisals and haudling company records in appraisal [Kuthn], *97

-Suggested basis for fixing rates [Cooper], 1060 397; Comment, 385

—Friction-clutch brake in use in Sacramento, Cal., *325

—Modern developments in air brakes for electric railway cars, *636

—Modern slack adjusters, *640

—Regenerative braking, C. M. & St. P. Ry. locomotives, *888; Comment, 1090

—Slack adjuster (Anderson Brake Adjuster Co), *690

—Slack adjuster (Gould), *1358

—Slack adjuster (Smith-Ward), *738

Brazil;

—Bahia Tramway, Lt. & Pr. Co.; --Increasing capacity of (United Furnace Corp'n), *1309
--Stokers:

Modern practice in mechanical stoking [Van Brunt], 1255
Underfeed type [Moloch], *985
Bonds (see Rall joints and bonds)
Poston, Mass.:

--Bay State Street Ry.:
Fare case:

Arlington fare case submitted to commission by court, n 40
B. J. Arnold's report, *13
Comment, 88, 214, 428
Company's final brief, 189
Final ruling of commission, n 412, 444
New fare schedule, 514
Overhead charges, 311
President Sullivan's testimony, 121
Reports of commission's engineers, 80
Result of fare increases on traffic in Massachusetts, 250 Brazil:

— Bahia Tramway, Lt. & Pr. Co.:

 Municipality disregards obligations to bondholders, 1363; Comment, 1327

Brazilian Tr., Lt. & Pr. Co. (see Toronto, Can.)

Bristol, Tenn.:

— Bristol Traction Co.:

 Cars converted for one-man operation, 39

Bristol & Nosfall, Street Br. (see Bandala, 1987) Convention at Chicago, Ill., 975
Atlanta, Ga.;

Georga Ry. & Pr. Co.;

Advertisements to develop favorable public opinion, 162
Strike n 509, n 740, n 853, 1262

White increase, 1360
Atlantic City, N. J.;

Adlantic City, N. J.;

Allantic City, N. J.;

A Bristol & Norfolk Street Ry. (see Randolph, Mass.)
British Columbia Elect. Ry. (see Vancouver, Australia: New South Wales government railways, Financial statement, 695

1 61

Brooklyn, A. V. Brooklyn Rapid Transit Co.: (Continued) Brooklyn, 3. A. Shifts-Brooklyn, Rapid Transit Co.: (Continued)

Gasoline road-roller operating costs

[Cram], *1163

Grouting tool for surfacing pavements

[Cram], *1065

Fustening of feeder pipes to vertical

[Cram], *1065

Fitch-pouring cone for paving work

[Cram], *1255

See S. E. Prediction of future transit developments [Williams], n 1032

Quarterly income statement, 949

13-Joup Kail bonds, Protection from theft [Me
Kelway], *1165

Bool er Safety first work in schools, n 81, n 698

Storage yard for heavy materials, use

or labor-saving equipment [Cram], *1284; Comment, 1281

Transfers, Method of printing, *216

Softrack layout standards [Bernard], *148

10 3 vis Srike threatened, *229, 277, 719

Transfers, Method of printing, *216

Softrack layout standards [Bernard], *148

10 4 vis frick threatened, *229, 277, 719

Transfers, Method of printing, *216

Softrack layout standards [Bernard], *148

10 1 vis frick threatened, *229, 277, 884

Track maintenance cost unit difficult to obtain [Cram], 363

10 10 visual length [McKelway], *684

11 10 visual length [McKelway], *684

12 27

10 10 Grolley wire maintenance inspection

[McKelway], 1026 mon to a rolley wire maintenance inspection [McKelway], 1026

LMcKelway], 1026

LMcK bu Door operating mechanism for new subway cars National Precumatic, New Utrecht Avens into opened, n 35, 1633.

Brooklyn & North River R.R. (see New York City)

Buffalo Loe port & Rochester Ry (see Rochestuffalo Southern Ry.:

Strike results in effort to remove receiver, n 113, n 157, Proposed strike agreement fails, n 246; Daminess loss, n 415 Settlement, 510 age done by strikers, n 331; Business loss, n 415 Settlement, 510 age done by strikers, n 331; Business loss, n 415 Settlement, 510 age done by strikers, n 331; Business loss, n 415 Settlement, 510 age done by strikers, n 331; Business loss, n 415 Settlement, 510 age done by strikers, n 331; Business loss, n 415 Settlement, 510 age done by strikers, n 331; Business loss, n 415 Settlement, 510 age done by strikers, n 331; Business loss, n 415 Settlement, 510 age done by strikers, n 390 and 1022 age done by strikers, n 346 age done by strikers, n 390 and 1022 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 360 and n 990 age done by strikers, n 361 age do

C

A to fall Partite caused by melting of insulation, 1070
— Partite caused by melting of insulation, 1070
— Partite caused by melting of insulation, 1070
— 1086, ["Conduit"], 1305
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
— 1086
—

Testing instrument for locating grounds that the way also Feeders) to the control of the control

Equipment and operating features, *962

California:

Littley regulative measures passed at electric transmission:

Railroad Commission:

Turisdiction over interurban bases, n 1368

33 School children's fares held discrimination;

Statistics showing size of railway industry spilon California 462

California Electric Railway Association:

Review of the California jitney situation, 11224

- Bafaty appeal sent to automobile owners, 1124

1124

— Canadian government ownership of railroads a failure, Comment, 169
— Canadian Railway Club:
Railway publicity [Thompson], 1346
— Electric railway conditions during 1915, 119
— Municipal railways operating at a los, n 1267
Canadian Electric Railway Association:
— Annual meeting and election of officers in
Toronto, Can., 281
Canton, Mass.:
— Norwood, Canton & Sharon Street Ry.:
Fare increase sought, n 1081
Capital Traction Co. (See Washington, D. C.)
Car design:

Capital Traction Co. (See Training Condesign:

—Construction materials and framing for modern cars, *595

—Double-deck car body design suggested, St. Joseph, Mo., *1030

—Floor and step heights for modern cars, 576

—Interest in recent developments, Comment, 663

Language For modern cars, *585

-Interest in recent developments, Comment, 663
-Lengths for modern cars, *585
-Low-floor cars discussed, *573
-Modern cars, Design and construction, *561
-Obsolete equipment expensive to operate, Comment, 1328
-P. A. Y. E. car evolution in Montreal, Can. [Gaboury], *1163
-Practical details often overlooked [Inspector of Car Equipcent], 238
-Rebuilding cars for rush-hour service, Sheboygan, Wis. [Shaw], *194; Connecticut Co., *1069
-Rebuilding old-type car bodies, Albany, N. Y., *980
-Rebuilt equipment may be economical, Comment, 918
-Safety developments, n. 85
-Standard weights for electric cars [Clardy], 283

283
— Truss-side construction for steel cars [Clardy], 283
— Truss-side construction for steel cars [Stillwell], *112, 1208; Comment, 1140
— Vestibuling of open-platform cars in Baltimore. Md., *302; Comment, 299
— Widths for modern car bodies, 591
— Widths of aisles and cross-seats for modern city cars, 592

Carhouses and storage yards;
— Cleveland (O.) Rv., Description of new storage yards, *132
— Material storage vard of Brooklyn Rapid Transit Co., Types and uses of laborsaving machinery, [Cram], *284; Comment, 1281
— Office made from an old car, *326
— Shop yards beautified by employees in Portland, Ore, 490; Comment, 475
— Water heater of home-make [Werth], *364
Cars.

BEAD THE INSTRUCTIONS ATH THE BEGINNING OF THE INDEX

Central Electric Railway Accountants' Ass'n:

—Mecting in Cincinnati, O., Proceedings, 1249;
Paper [Kasemcier], 1250
Central Electric Nailway Ass'n.:

—Engineering subdivision needed, Comment, 1139; [Henry], 1254

—Mecting in June held on lake steamer, 23, 63

—Mecting in Toledo, O., 1147; Papers [Clapp], 1110; [Coates], 1154; [Coen], 1109; [Mackali], *1151; [Rummey], 1150; [Dedrick], 1300; Comment, 1281

Charleston, W. Va.:

—Charleston, Interurban R.R.:
Power contract, n 116

Charlotte, N. C.:

—Piedmont & Northern Ry.:
Flood causes severe damage, n 145, *188

—Southern Public Utilities Co.:
Company publications, Editing and distribution [Carraway], *792
Newspapers as a medium of publicity [Carraway], 936
One-man car operating experiences [Ervin], *144
Wage increase, n 990

Charlottesville, Va.:

—Charlottesville & Albemarle Ry. Co.:
Operator's name displayed in one-man cars [Livers], *726

Chattanooga, Tenn:

—Chattanooga Ry. & Lt. Co.:
Double routed cars, *357
Strike, n 372, n 415; New working agreement, 946

Chattahoochee Valley Ry:

—Storage battery car, *368
(Chester, Pa.:

—Southern Pennsylvania Tr. Co.:
Precautions against accidents [Jack], 1294

Chicago, III:

—Bylleshy, H. M. & Co.:

Chicago, III.:

— Byllesby, II. M., & Co.:

Safety-first campaigns among children,
n 82

Safety-first campaigns among children, n 82
n 82
Selling securities to patrons, *264, n 854;
Comment, 256; Intercets in subject spreading [Hodge], 403

-Chicago Elevated Rys.:
Advertising campaign to stimulate traffic, *359
Annual report, 1315
Safety record for past eight years, n 122

-Chicago & Interurban Tr. Co.:
Franchise renewed in Blue Island, Ill., n 945...

-Chicago Surface Lines:
Traffic investigation of Loop district by B. O. S. E., *183, *218, *271

-Chicago & West Towns Ry.:
Court upholds railway in rate increase case, 987

case, 987

Middle West Utilities Co.:
Financial statement, 205

Middle West Utilities Co.:
Financial statement, 205

Preparedness parade causes rerouting of loop-district cars, n 9
Booklet on subsidiaries, n 182

—Rapid transit plans:
Inspection tour in New York City, n 1075, n 1123
Report of Chicago Traction & Subway Commission, *1197, 1297; Comment, 1231; 1232
Traction report of B. O. S. E. issued, n 1021

—Standard Gas & Elect. Co.:
—Union station proposal of Illinois Central R.R., *537, n 990; Electrification plans, n 1311; Comment, 1329
Chicago, Lake Shore & South Bend Ry. (See Michigan City, Ind)
Chicago, Milwaukee & St. Paul Ry.:
—Financial and operating statement, 993
—High candle-power headlights on electric

-High candle-power headlights on electric locomotives. 323
-Locomotives of regenerative, axle-mounted-motor type, *888; Comment, 861, 1004, 1090

Chicago, North Shore & Milwaukee R.R. (See Highwood, Ill.)
Chicago Ottawa & Peoria Ry. (See Joliet. Ill.)
Chicago & Joliet Elect. Ry. (See Joliet. Ill.)
Chicago & Milwaukee Elect. R.R. (See Chicago, North Shore & Milwaukee R.R. under Highwood, Ill.)
Chico. Cal.:
—Northern Electric Ry.:

Reorganization proceedings, 743, n 909
Chosen (Corea):
—Operating statistics of railroads. 695

Chosen (Corea):

Operating statistics of railroads, 695
Cincinnati, O.:

Company objects to proposed extensions, n 330
Fare case, 244, n 245
Financial condition determined for rate making, 244
Hearing on valuation for fixing fares in new franchise, 201
Track maintenance unit for comparing costs [Berry], 403
Traffic report on proposed loop, n 1313
Wage agreement accepted, 74
City Lt. & Tr. (o. (See Scdalia, Mo.)

Claims Association: Viention:

Committee reports, 819, 821, 839; *879
Papers and discussions [Brown], *876;
[Green], *868; [Hare], *873;
[Reynolds], *872; [Rice], *878;
[Tynan], 870; [Walch], *877;
[Winsor], *874
President's address, *820
Proceedings, *820
Program, 497; Comment, 475; Changes, 538
Social relations, Special committee's report on employees' benefit associations, *879; Comment, 861
e, Tex.: Convention: port on employees' benefit associations, *879; Comment, 861

Cleburne, Tex.:

—Cleburne Street Ry.:

Abandonment of line, n 1173

Cleveland, O.:

—Bridge wrecked by runaway car, *723

—Cleveland Ry.:

Dipping equipment for painting car fenders [Ebeling], *321

East Cleveland franchise discussed, n 115, n 1035

Financial statement, n 1267

Measuring granite block yardage by weight, *410

Method of flushing city streets [Ebeling], *64

Ohio compensation act [Green], *868

Portable controller for shop use [Ebeling], *685

Power contract controversy, 547, n 853, Power controller for snop use [Ebeling], *685

Power contract controversy, 547, n 853, n 906, n 947, n 1034, 1074, 1123, n 1217, n 1315

Steam flow meters, Application to reciprocating engines [Phillips], *728

Storage yards at Denison Avenue and Harvard Avenue, *132

Tax dispute settled, n 158

Track renewal caused by corrosion, *545

—Lake Shore Elect. Ry:

Taxation and regulation problems [Coen], 1109

—Ohio State Pr. Co., Power plant at Fremont, *1343

—Rapid transit financing plan, n 1034, p 1172 *1343

—Rapid transit financing plan, n 1034, n 1172
Coal handling machinery of Holyoke (Mass.)

Street Ry. power station, *1190
Coal situation in Central States, Reasons for shortage, 1251; Comment, 1003
Coasting (see Energy consumption)
Color blindness, New tests for, Comment, 88
Colorado: -Public Utilities Commission:
Authority upheld by Supreme Court.
n 1362 n 1362
Free transportation made unlawful, n 122
Colorado Elect. Lt., Pr. & Ry. Ass'n:
—Convention, 724
Columbus, Ga:
—Columbus R.R.:
Master mechanic's office made from an old car, *326
Columbus, O.:
—Columbus Rv. Pr. & Lt. Co. Columbus, O.:

—Columbus Ry., Pr. & Lt. Co.:

Annual report, 1077

Safety work on electric railways

[Clapp], 1110

Storeroom methods [Bulkeley], *101

Company publications (see Publicity)

Company Sections (see American Electric Railways Ass'n.)

Concreting precautions for cold weather work,

458

Connecting Co. (see New Hoven Corn.) Connecticut Co. (see New Haven, Conn.) Contact systems (see Overhead contact system; Third-rail contact system) Controllers and wiring:

—C., M. & St. P. locomotive control equipment, *888 -Control equipment for low floor cars (West-inghouse), *735 -Compressor circuits protected by potential relays on Long Island R.R. [Bleck-wcdel], *454 wedel], *454

—Fuse cabinet sealed to assure supply of fuses [Mullett], *29

—General discussion on control systems for modern cars, *651

—Ratchet switch for eliminating arcing, Rochester, N. Y. [Cook], *1235

—Two-unit car control, equipment, Toledo, O. (Westinghouse), *738

Corrugation of rails (see Rails)

Couplers:

—Modern practice, 640

Cranes, Different types and operating practice for material storage yards [Cram], *1284; Comment, 1281

Crossing signals (see Signals) Crossing signals (see Dignals)
Cuba:

— Havana Electric Ry., Lt. & Pr. Co.:

— Difficulties with double trolley system and small street clearances, *367
Operating data of new power plant, 72
Cumberland County Pr. & Lt. Co. (see Portland, Me.)
Current collecting devices:

— Modern practice and equipment, *659

— Welding broken trolley poles in Kansas City, Mo., 198

Dallas, Tex.:

— City's right to regulate jitneys sustained by court, n 952

— Dallas Consolidated Electric Street Ry.:

Method of unloading new cars, *941

— Express terminal plans, n 947

— Local ownership and valuation controversy, 370, 414, n 692, 903, 987, n 1033, 1122, n 1170, n 1217

— Terminal station for interurban lines [Moore], *525; Comment, 522; Correction, 713

— Texas Elect. Ry. incorporates to consolidate Texas Traction Co. and Southern Traction Co., n 117, 205

Davenport, Ia.:

— United Lt. & Rys.:

Electric-welded joint practice [Smith], *68

Denver, Col.: Denver, Col.:

—Denver, Col.:

Supreme Court upholds State Commission in fare case [Wells], 96

—Denver Tramway:

Unit for comparing track maintenance cost: [West] 500

Company publications [Hild], *787

Financial statement, n 158

Rapid track laying to accommodate mobilization of troops, n 147

"Tramway Bulletin" improved, n 1080

Wage increase request withdrawn, n 1126

Depreciation (see Appraisal of railway property)

Des Moines City Ry.:

Equipment installed in rebuilt cars

*1027

Safety first plans, n 1130 Total n *720 skip-stop operation, n 123, 162, 208 Vater heater, Home-made [Werth], Water 1 District of Columbia (see Washington, D. C.)
Doherty, H. L., & Co. See New York City)
Doors, seats and windows:

Conductor's adjustable scat, Akron, O., *942

Door and control interlocking, 657

Door arrangement for modern cars. *577

Door control attachment on brake valve (Safety Car Devices), *405

General discussion on modern door operation, *613

General discussion on modern seat design, *618 -General *618 - General discussion on inodern seat design,
*618

- Modern practice in window and curtain construction, 620

New type door engine (Consolidated Car Heating), *69

- New York Municipal Rv. Corp'n., Door operating mechanism for new subway cars (National Pneumatic), *195

- Vestibuling of open-platform cars in Baltimore, Md., *302; Comment, 299

- Washington Ry. & Elect. Co.. Seats for conductors permitted. n 1368

Drawbridge protective devices, *1102, *1202; [Strauss], *1210

Drawbridge safeguarding for railway operation [Johnson], 1339; Comment. 1327

Drawbridge safety regulations, 1146 Earnings of electric railways (see Financial)
Eastern Pennsylvania Rys. (see Pottsville, Pa.)
Fast St. Louis, Ill.:

—East St. Louis & Suburban R.R.:
One-man car permit sustained by Circuit Court, n 123
Elastic limit defined by A. S. T. M., 23; Comment

Elastic limit defined by A. S. T. M., 23; Comment, 1

Electrical industries rapid growth [Steuart], *779

Flectric Railway Journal:

—Convention issue, Comment, 663; Letters of approval [Lewis], 895; [Cooper], 895

—Convention report issues, Comment, 706

Electric railways:

—Combination against union domination necessary, 453; Comment, 427

—Concerted action desirable in efforts to increase income, Comment, 477

—Conditions to be met after war [Henry], *756

—Co-operation with technical schools, Comment, 170

—Discrimination of accident insurance associations against, Comment, 171

—English custom of honoring railway officials contrasted with American practice, Comment, 1231

Electric railways: (Continued)

— Engineering development of the ordestric railway [Sprague], *771

— Federal inquiry into railway transportation problems provided for, n 157, promotes and operating statistics for first hair of 1916, 551

— Future status of the street railway [Jones], 1157

— Interurban lines, Analysis of financial and -Interurban lines, Analysis of financial and other developments [Doolittle], 392,937 -Interurban railway outlook [Boardman], War-time conditions in England, in 404
Employees:

Apprentice systems needed by electric railways, Comment, 213

Board of distipline established in Indianapolis, Ind., 1073

Company built houses for employees of Norfolk & Western Ry., n *194*

Co-operation urged by superintendent's open letter, Joliet, Ill., n 207

Co-operation with technical schools in training men, Comment, 170

Co-operation with technical schools in training men, Comment, 170

Co-operation with technical schools in training men, Comment, 170

Co-operation with technical schools in training men, Comment, 170

Co-operation with technical schools in training men, Comment, 170

Co-operation with technical schools in training men, Comment, 170

Co-operation with technical schools in training men, Comment, 170

Co-operation with technical schools in training men, Comment, 180

College of the condition of the condi erties, 199, n 1216

rance:
Employees receive policies as Christmas
presents, Manhattan & Queens Tr.
Corp'n, N. Y. City, n 1361
Group insurance for railways) [Chamberlain], 1291
New Jersey's compensation law I [Tynan], 870
Ohio's compensation act [Green], *868
Plan adopted in Baltimore, Md. 79
Plan of Hudson-Manhattan Co., New
York City, 553
Under employees' mutual benefit associations, *879; Comment, 361
Under mutual company, Comment, 170
Under workmen's compensation law, 60:
Comment, 47
Workmen's compensation laws furter-Labor shortage acute on eastern; railways, n 1215

Labor-saving devices and high wages, Comment, 1281

Large number of employees noting the public, Comment, 383

Medical examination of employees, and the water ities [Hall], *441; Loan funds, [Hall], *726

Mutual benefit associations, Report of A. R. A. committee, *879; Comment, 861

—Philadelphia (Pa.) Rapid Transit Co. Details of co-operative *968; Comment, 960

Profit sharing a possible solution and troubles, Comment, 341

—Psychology of economical habits [Edudorff], 1289

—Publication of salaries, Comment, and the working man [Shonts], 1237

—Public utility labor disputes, Papers before the Academy of Political Science, 1102; Comment, 1139

Railways should combine against public will be added to available material [Vulcan], 32371

—Shop workmen should know relative tooks of available material [Vulcan], 32371

—Shortage of labor necessitates advertising for platform men, n 1360

—Social meetings as an aid in company man agement, Comment, 300

—Tests for color blindness, Comment, 88

—Training of men for executive positions [Bradlev], *768

—Training platform men by traveling to structors in Kansas City, Montangula structors

(Abbreviations: Illustrated in Short news item.)

Employees: (Continued) ployees: (Continued)

-Wage increases:
Atlanta, Ga., 1360
Baitimore, Md., n 740
Bangor (Mc.) Ry. & Elect. Co., n 373
Bay State Street Ry., 1072
Beaumont, Tex., n 509
Berkshire Street Ry., n 35
Boston Elevated Ry., n 75, n 154; Comment, 130
Brooklyn (N. Y.) Rapid Transit Co., 412
Chattanooga, Tenn., 946
Chicago & Joliet Elect. Ry., n 203
Cinc.mati (O.) Traction Co., 74
Galveston, Tex., n 463
Harrisburg, Pa., 200
Holyoke, Mass., n 906, 1172
Indianapolis Traction & Terminal Co.,
114
Interparant Harrisburg, Pa., 200
Holyoke, Mass., n 906, 1172
Indianapolis Traction & Terminal Co., 114
Interborough Rapid Transit Co., New York City, *232, 413
Kansas City (Mo.) Rys., n 1125
Lackawanna & Wyoming Valley R.R., n 510
Louisville, Ky., n 509
Memphis (Tenn.) Street Ry., 291
Mount Vernon, N. Y., 75
Nashville, Tenn., n 463
New Jersey & Pennsylvania Tr. Co., n 291
New York Rys., *229, 507
Niagara (N. Y.) Gorge Ry., n 549
Philadelphia Rapid Transit Co., n 415
Port Arthur, Tex., n 548
Quebec, Can., 1361
Rockland (Mc.), Thomaston & Camden Street Ry., n 291
Schenectady, N. Y., n 549
Southern Public Utilities Co., n 990
Springeld, Mass., 73
Third Avenue Ry., New York City, n 546
Trenton & Mercer County (N. J.) Tr.
Corp'n, 156
United Rys. of St. Louis, 1315
Worcester, Mass., 73
Yonkers, N. Y., 75

Wage question from economic and political standpoints, Comment, 1048
—Wages, Government regulation favored by National Municipal League, 1200
—Wages, Government regulation of, Comment, 1139
—Welfare work, Kansas City (Mo.) Rys., 670
Energy consumption:
—Coasting recorder maintenance on Long Island R.R. [Bleckwedel], *983
—Energy losses in car operation require special study, Comment, 429
—Fundamentals of energy saving in car operation [Arthur], 397; Comment, 385
—Modern devices for saving energy, *658
—Starting effort tests on cars [Ewing], *974
—Visualizing energy losses, Comment, 89
Engineering Ass'n.) Eengland (see Great Britain)
Experience ordinances (see Employees)
Export trade, Comment, 1327
Express. (See Freight and express)

Fare collection:

Combination fare-box and register (Am. Rys. Equipment Co.), *1309

Front-end collector's transfer in Kansas City, Mo., *57

Front-end fare collectors used in Vancouver, Can., n 1040

General discussion on modern practice in fare-collecting and registering methods and equipment, *622

Metal ticket fare registration system (Johnson Fare Box), *1120

Mileage recording and fare registering device for interurban roads (Bonham), *1257

Pay-as-you-pass-the-fare-box system on Roch--1257
-Pay-as-you-pass-the-fare-box system on Rochester (N. Y.) cars [Cook], *1234; Comment, 1231
-Prepayment systems, Discussion of, 844 Prepayment systems, Discussion of Fares;

Bay State Street Ry, fare case (see Boston, Mass.)

Burlington County (N. J.) Transit Co. fare case, n 81

Chicago & West Towns rate case, Supreme Court ruling, 987

Cincinnati (O.) Traction Co. fare case, 244, n 245

Denver & South Platte (Col.) Ry., Supreme n 245

Denver & South Platte (Col.) Ry., Supreme Court upholds fare granted by State Commission [Wells], 96

Effect of increased fares on revenue, Boston, Mass., 250; Comment, 214

Illinois Traction System, St. Louis fare case, 995, 1222; Details of final ruling, 1269, n 1362 -Increases:
Illinois Traction System, 1222, 1320
Manchester (N. H.) & Derry Street Ry.,
Eight-cent fare unit allowed, 952

-Increases: (Continued)

Massachusetts Northeastern Street Ry.,
Six-cent fare allowed, 951, 1038;
Comment, 1003
New Jersey & Pennsylvania Tr. Co., 911
Randolph, Mass., Six-cent fare allowed,
n 469, 553
Seven-cent fare allowed in New Hampshire, 851
Titusville (Pa.) Tr. Co., Six-cent fare allowed, n 1178
New England fare increases, Comment, 917
Interurbans of Indiana allowed only single fares within limits of cities, n 747
Kansas City (Mo.) Rys., Suburban fare case,
n 1180
Length of single-fare rides in American cities [McGrath], "223; Comment, 214
Maine Commission adjusts fare zones of Lewiston, Augusta & Waterville Street
Ry., "180
Wellstein Augusta & Waterville Street
Ry., "180
Wellstein Augusta & Waterville Street
Ry., "180
Pittsburgh (Pa.) Rys., Owl car fare case,
n 39, n 79, n 699, 856, n 1179; Comment, 45
Prepayment booths used for special traffic,
Springfield, Mass., "1348
Puget Sound Tr., Lt. & Pr. Co., Fare case,
n 377
Reduced-rate tickets abolished on Gary &
Interurban R.R., n 39
School fare held discriminatory by California commission, n 1223
Service rates under municipal ownership
[Lippincott], 1010
Suggested basis for fixing rates [Cooper],
1060
United Traction Co., Albany, N. Y., Fare
increase denied, 62; Comment, 45
Union Traction Co. of Indiana, Grand
County fare case, 80
Vancouver, B. C., Change in children's
fares, 469
Zone system proposed for Boston Elevated
Ry., "675
ederal regulation of railroads, Recommenda-

-Zone system proposed for Boston Elevated Ry., *675

Federal regulation of railroads, Recommendations of Philadelphia Bourse, n 436

eders:

--Cable recling machine [Foster], *192

--Fastening of feeder pipes to vertical columns, Brooklyn, N. Y. [Tanis], *1257

--Fault-locating instrument (Matthews &
Bros.), *1213

--Fireproofing of cables in manholes [Hovey],
1068

Insulation of the force of the services of the s

-Insulation clamp for feeder wires (Hatch),

*544

—Terminal for connecting feeders to thirdrail (Standard Underground), *1213

—(See also Cables)
Fenders and wheel guards:

—Modern tendencies, 642

—New York commission approves the American Safety Fender, n 906

Financial:

New York commission approves the American Safety Fender, n 906

Nancial:

Allowable capitalization for foreclosed railway, Massachusetts Commission's discussion, n 1364

Annual report of Georgia railways, 374

Annual reports, Simplicity and clearness desirable, Comment, 1047

Bay State Street Ry.:

Analysis of revenue and expenses [Arnold], *13

Brief of financial condition, 189

Effect of increased fares on revenue, 250; Comment, 214

British use railway securities as collateral for war loan, 1127

California railway statistics, 462

Canadian government railroads a financial failure, Comment, 169

Chicago, Ill., Report on financing plans for rapid transit system, 1297

Earnings of electric railways:

Current tendencies in [Conway], 10;

Comment, 2

Geographical analyses by A. E. R. A., 119, 375, 551, 948, 1175, 1266

Effect of regulation on speculation and investment in public utilities, 1174; Comment, 1139

Interurban railways, Analysis of conditions [Doolittle], 392, 937

Iowa interurban railways, Tax valuation increased, n 549

Investment per revenue passenger in relation to density of traffic, *58; Comment, 46

Jacksonville rate case, 360

Maine commission's ruling on depreciation and fair return, *180

Municipal coexition in San Erangisco, Cal

Maine commission's ruling on depreciation and fair return, *180

Municipal operation in San Francisco, Cal., 138; Comment, 130

Nebraskan railway earnings show decrease in 1915, n 334

Ohio tax assessments on electric railway property increased, n 77

Pavement costs an unfair burden on car riders, Comment, 1089

Regulation of capitalization and inter-----Regulation corporate matters, 1100

Financial: (Continued)
—Saving bank investments in public utility securities, 926; Comment, 917
—Selling securities to patrons:
Byllesby properties, *264; Comment, 256
Iowa Ry, & Lt. Co., *356
—Steam railroads, Interstate Commerce Commission's statistical reports abstracted [1915], 103; [1916], 972
—Stock consolidation without physical appraisal, Decision of Illinois commission, 965; Comment, 959
—Stockholders should know company's problems, Comment, 521
—Taxation of different forms in Pennsylvania [Spahr], 1245
— Virginia tax assessments, 949
—Washington railways depreciate from automobile competition, n 511

Fire protection and insurance:
—(o-operation in fire insurance matters [Howman], 1292

Fitchburg & Leominster Street Ry.:

Fitchburg & Leominster Street Ry.:

---Fitchburg & Leominster Street Ry.:
Fair play between claim agents and public [Bennett], 147
Flag with self waving attachment (General

lic [Bennett], 147
Flag with self waving attachment (General Electric), *724
Fonda, Johnstown & Gloversville R. R. (See Gloversville, N. Y.)
Flood-lighting of railroad yards (Western Electric), *1119
Flushing streets with tank-car, Cleveland, O. [Ebeling], 64
Fort Dodge, Des Moines & Southern R. R.:
—Extensions to power plant and roadway, *344; Comment, 343
Fort Smith, Ark.:
—Fort Smith Lt. & Tr. Co.:
Method of concreting track, *111
Pull-in truck of simple design [Wright], *148
Fort Wayne, Ind.:

Fort Wayne, Ind.:

—Fort Wayne & Northern Indiana Tr. Co.:

Sale of energy on interurban lines, *924

Strike in Logansport, Ind., n 156, n 204

Fort Worth, Tex.:

—Jitneys excluded from business district, n
1320

Northern Texas Tr. Co.

-Northern Texas Tr. Co.; One-man car operation, n 1179; [Beck], 1195

France:

--A-merican Industrial Commission's investi-gation begun, 381 --Conditions in French electric railway in-dustry, n 75

dustry, n 75
Franchises:

—Henderson, Ky., passes radical franchise ordinance, n 416, n 1035

—Minneapolis, Minn., Proposed ordinance with provisions for partnership between city and railway, 1261

—Relation of national issues to local franchises [King], *797

-Resettlement franchise passed in Oakland, Cal., 1071

—Strike arbitration clauses suggested in New York City, 329 Freeport, Ill.:

— Freeport Ry. & Lt. Co.:

Commission's decision allowing stock consolidation without physical appraisal, 965; Comment, 959

Freight and express:

----Boston Elevated Ry. freight plans, n 995, —Car famines and freight interchange, Comment, 129

-Compensation for carrying U. S. mail, 807, n 853, n 1131; Zone system legislation proposed, Comment, 1282

-Contracts with old-line companies, 845

-Freight and express traffic on electric rail-ways [Ruinney], 1150

—Freight service in cities approved by Massa-chusetts Commission, n 1039 —Freight service of Fort Dodge, Des Moines & Southern R.R., *344

-Handling of freight, A. E. R. A. committee report, 845

-Illinois Traction System, Handling of car-load freight, *48; Comment, 46, 129

-Interurban freight line, Aroostook Valley R.R., Me., *1006

-Kansas City Rys., Freight service in city streets, n 1366

—Pick-up and delivery system inaugurated in Vancouver, (2n., n 1081 —Toledo (O.) & Western R.R. freight traffic [Swartz], *1055

Front-end collectors (see Fare Collection) Fuse labels to prevent accidents [Ransom], *897

Galesburg, Ill.:

—Galesburg Ry., Ltg. & Pr. Co.:

Armature banding tensioner, *984

Bulldozer made of an air-brake cylinder, *326

Commutator slotting attachment for Commutator slotting attachment for lathe, *368
Pipe bender made of trolley wheels, *459

Galt, Can.:

Lake Erie & Northern Ry.:

Catenary construction with aluminum messenger and steel contact wire,

*1353

Galveston, Tex.:

—Galveston Electric Co.:

Wage increase, n 463
Garage of portable type useful in construction
work (Pruden), *1070

work (Pruden), 1000
Gasoline cars:

Union Pacific R.R., Combination mail, express and baggage car (McKeen), *153
Gears and pinions:

—Gear cases:

Development of sheet-steel type
1 Sanier 1. *1166

Development of sheet-steel type
[Squier], *1166
Maintenance experience with different
types [Vulcan], 1116
—Mating of worn gears and pinions on
Springfield (III.) Consolidated ky., 286
—Modern practice, 635
—Relation of gears and pinions to motor design [McCloskey], *408
Georgia:

Georgia:

Georgia:

Financial report on Georgian electric railways, 374

Supreme Court ruling in jitney case, n 122
Georgia Ry. & Pr. Co. (see Atlanta, Ga.)

Georgia Ry. & Pr. Co. (see Attacks),
Germany:
—Frankfort-on-Main Municipal Street Rys.,
Financial and operating report, n 263
Gloversville, N. Y.:
—Fonda, Johnstown & Gloversville R.R.:
Annual report, 1036
Government ownership:
—Canadian experience unfavorable, Comment,
169

169 government management detailed by Merchants' Association of New Yorκ, 1196

by Mcrchants' Association of New York, 1196

—Resolution providing for investigation by I. C. C., n 200

—(Sce also Municipal ownership)
Grade crossing safety recommendations of A. R. A., *270
Grade crossing signals (see Signals)
Grand Rapids, Mich.:

—United Lt. & Rys. Co.:
Annual report, 292
Grand Trunk Ry.:

—Railway publicity [Thompson], 1346
Graphical solution of railway problems, University of Illinois bulletin, n 281
Great Britain:

—Charing Cross & Hampstead Ry.:
Klaxon horn used as crossing signal during fogs, 360

—Financial statement of railways of South Shields, Newcastle and Scuthampton, 465

—Glasgow Corporation Trainways:
Annual report 417

Shields, Newcastle and Scuthampton,
465
Glasgow Corporation Tramways:
Annual report, 417
—London, Letters from, 32, 242, 411, 739,
1031, 1169
—London Underground Electric Rys.:
Advertising posters, *400
—Manchester Corp'n. Tramways:
Financial statement, 36
—North Eastern Railway:
Electrification of the Shildon-Newport
freight line at 1500 volts d.c., *4;
Correction, 147
—Strike handling methods, 535
—War-time conditions in England, n 404

H

Hainesport, N. H.:

—Burlington County Transit Co.:

I'are case, n 81, n 1223

Haiti:

— Haitian-American corporation for acquiring Haitian public utilities planned, n 74

Hamilton, Can.:

— Dominion Power & Transmission Co.:

Suit to obtain alleged hypothecated funds, n 908

Ilamilton, O.:

— Cincinnati, Dayton & Toledo Tr. Co.:

Court declares company insolvent, n 37

Harrisburg, Pa.:

— Jitney ordinance amended, n 1081

-Jitney ordinance amended, n 1081

— Harrisburg Rys.:
Strike, 155, 243, n 291, n 331, n 372, 548, n 549; Comment, 384
Working agreement with loyal men, Wages increased, 200
Haverhill, Mass.:

-Massachusetts Northeastern Street Ry.: Six-cent fare allowed, 951, 1038; Comment, 1002

bearings axle car roof

on rotary rings converters [Brown], 30 Converters [Brown], 30

Headlights:

High candle-power design for C. M. & St.
P. electric locomotives, 323

High candle-power design for C. M. & St.
P. electric locomotives, 323
—Methods of installation, Los Angeles Ry.
[Clarke], *107
—Modern practice, *617
—Mounting on car roofs, Hazleton, Pa.
[Brown], *501
—Practice and tests, Anderson, Ind. [Hemming], *1354
—Projector for Golden-Glow headlights (Electric Service Supplies), 732
—Sand-blasted glass fronts, Portland, Me., *984
—Theory of illumination in headlight con

**984

-Theory of illumination in headlight con struction [Mackall], *1151; Discussion, 1147

Heating of cars:

-Forced-ventilation electric heater (Peter Smith), *899

-General discussion on modern practice, *603

-Hot-water heater for interurban cars (Peter Smith), *458

-New type of electric heater (Peter Smith), 153

-Safety-switch for heating circuits (Krantz).

-Safety-switch for heating circuits (Krantz),

—Safety-switch for heating circuits (Krantz), *324
Heavy electric traction:
—Relation of tractive effort to coefficient of adhesion, Comment, 342
—Review of typical a.c. and d.c. installations in United States [Carlier], 1155; Comment, 1139
—Steam railroad electrification, History of [Sprague], *774; Correction [Kennedy]. 1114
—Swiss Federal Rys., Discussion of proposed propulsion systems, *225; Comment, 215; [Arthur], 319
Henderson, Ky.:
—Franchise ordinance drawn with radical features, n 416, n 1035
High-tension d.c. railways:
—Electrification of Shildon-Newport freight line, North Eastern Railway, *4; Correction, 147
—Fort Dodge, Des Moines & Southern R.R., Extensions and sale of power, *344; Comment, 343
—Salt Lake & Utah R.R.: New extension, equipment and service, *143
Highway crossings (see Grade crossings; Signals)

Highway crossings (see Grade crossings; Signals)

nals)
Highwood, Ill.:
—Chicago & Milwaukee R.R. (see Chicago North Shore & Milwaukee R.R.)
—Chicago, North Shore & Milwaukee R.R.:
Handling troops, *1295
Reorganization plans completed, 324
Holland, Mich:
—Grand Rapids, Holland & Chicago Ry.:
I.C.C. refuses to establish through routes and joint rates with Indiana Transportation Co., n 82
Holyoke, Mass.:

Holyoke, Mass.:

Holyoke Street Ry.:
Remodeling of steam end of power station, *1190

tion, *1290

settlement, n 906, tion, 1190
Wage arbitration scttlement, n 906,

T172
Honolulu, Hawaii:
—Honolulu Rapid Transit & Land Co.:
Financial statement, 77
Hot Springs, Ark.:
—Hot Springs, Street Ry.:
Psychological puzzle of the jitney bus
[Dillon], 147
Houston, Tex.:

1

Court overrules commission:
Court overrules commission in Chicago
& West Towns rate case, 987
Jacksonville rate case, n 204, 360
Illinois Northern Utilities Co., Decision
allowing stock consolidation without
physical appraisal, 965; Comment,
959

Rules issued for overhead lines, n 1342

Illinois Central R.R.:
—Electrification of Chicago terminal, Recommended by commission, n 907; Railway company's plans, n 1311; Comment, 1329
—Proposed union station for Chicago, Ill., *537, n 990

Illinois Electric Railway Ass'u.:
—Chicago meeting, 1138; Papers [Beck], 1195; [Case], 1194; [Insull], 1160; [Pegler], 1160; [Whitmore], 1159

Illinois Traction System (see reoria, Ill.)
Illinois University Bulletin on graphical solutions for railway problems, n 281

Indiana:

—Public Service Commission:
—Public Service Commission:
—Public Service Commission:
—Interurbans allowed only single fare
within limits of cities, n 747
Union Traction Co. permitted to lease
Muncie & Portland Tr. Co., n 120
Indiana Harbor, Ind.:
—Gary & Interurban R.R.:
_Low-fare tickets abolished by commission, n 39
Indianapolis, Ind.:
—Experience clause eliminated from city code,
n 853
—Indianapolis & Cincinnati Tr. Co.

Experience clause eliminated from city code, n 853

Indianapolis & Cincinnati Tr. Co.
Attendance at the Toledo meeting of the C. E. R. A. [Henry], 1254; Comment, 1139

Review of railway conditions and activities of A. E. R. A. [Henry], 756

Sale of energy along interurban lines, *924

Indianapolis Traction & Terminal Co.:
Efforts to unionize employees, n 988

Employees board of discipline established, 1073

Financial statement, 696

Individual working agreements with employees, History of, *679; Comment, 707

Pronosed wage agreement, 114

Strike, 1073, 1124

Terre Haute, Indianapolis & Eastern Tr. Co.:
Annual report, 76

Interurban railway conditions [Boardman], *775

Mileage and fare registering machine for interurban service (Bonham), *1257

Sale of energy along interurban lines, *923

Sale of energy along interurban lines,

"923

—Union Traction Co.:

Commission permits leasing of Muncie & Portland Tr. Co., n 120
Injuries to persons (see Accident claim departpartment)
Inspection of cars:

—Record form system [Blanchard], *1352
Insulating material baving new properties (Diamond State Fiber Co.), *1214
Insulators (see Transmission lines)
Insurance:

Finalwees' (see Employees)

urance:
-Employees' (see Employees)
-Accident insurance companies' discrimina-tion against electric railways, Comment,

—Accident insurance companies' discrimination against electric railways, Comment, 171

—Mutual insurance of different forms, Comment, 170

Interborough Consolidated Corp'n. (see New York City)
Interborough Rapid Transit Co. (see New York City)
International Ry. (see Buffalo, N. Y.)
International Traction (o. (see Buffalo, N. Y.)
International Traction (o. (see Buffalo, N. Y.)
Interstate Commerce Commission:

—Grand Rapids, Holland & Chicago Ry. not compelled to establish through routes and joint rates with Indiana Transportation Co., n 82

—Steam railroad statistics [1915], 103; [1916], 972

—St. Louis (Mo.) fare case, Illinois Traction System, 995, 1222

—Uniform system of accounts, Questions and answers, 1078
Interurban railways:

—Analysis of financial and other developments [Doolittle], 390, 937

—General outlook of [Boardman], *725
Inventories (see Accounting; Appraisal of railway property)
Investment Bankers' Ass'n.:

—Public utilities' securities as savings bank investments, 926; Comment, 917
Investments (see Financial)
Iowa:

—Tax valuation of interurban railways in-

Investments (see Financial)

Iowa:

Tax valuation of interurban railways increased, n 549

Iowa Ry. & Lt. Co. (see Cedar Rapids, Ia.)

Isles of safety, Unfavorable criticism in New York City, n 163

Ithaca, N. Y.:

Ithaca Traction Corp'n.:

Staging of car wreck for moving picture company, *227

Jacksonville, Fla.:

—Jacksonville Traction Co.:
Strike, n 1033
Jacksonville, Ill.:

—Jacksonville Ry. & Lt. Co.
Rate case, n 204, 360

Jitney bus: (Continued)

litney bus: (Continued)

—Fort Worth, Tex., jitneys excluded from business district, n 1320

—Georgia Supreme Court ruling on Commission's regulation of jitneys, n 122

—Harrisburg, Pa., Car strikers seek jitney aid, n 372, n 548; Comment, 384; Ordinance amended, n 1081

—Houston, Tex., Court upholds jitney ordinace, n 208

—Insurance company classes jitneys as public conveyances, n 279

—Jitney operation creates demand for quicker service on Pacific Coast, Comment, 707

—Legal protection against jitney competition [McCahiill], 1248; Discussion, 1244

—Long Beach, Cal., Operating company formed, n 1223

—Los Angeles, Cal.: Operating data, *139

—Railway's protest, 514

—Sixteen-passenger bodies, 139

—McAlester, Okla., restricts operation, n 81

—New Jersey law upheld by court, n 1131

—New Orleans, La., Court ruling, n 124

—Pennsylvania commission's permits, n 461, 513, n 1222

—Portland, Ore., Regulation of jitneys, n 114, n 336, n 1081, 1130, n 1180, n 1222; Comment, 87

—Providence, R. I., Operation decreasing, n 158

Ruling on ordinance, Muskogce, Okla., n 123

—Sacramento, Cal. Stringent ordinance causes n 158

Ruling on ordinance, Muskogce, Okla., n 123

Sacramento, Cal. Stringent ordinance causes withdrawal of jitneys, n 420

San Francisco, Cal., Ruled from business district, n 208, n 335, n 378, n 419, n 698 698 Seattle, Wash., Regulation by City Council, n 163, n 251, n 294, n 377, n 468, n 857 Springfield, Mass., passes strict ordinance, — Springheid,
n 996
— Topeka, Kan., adopts stringent ordinal.
n 81
— Wilkes-Barre (Pa.) Rys. protest against operation without State certificate, n 163
Joliet, Ill.:
— Chicago, Ottawa & Peoria Ry.:
Employees' co-operation urged in open letter, 207
— Chicago & Joliet Elect. Ry.:
Wages increased, n 203
Jonlin, Mo.:

transfer plan abandoned, 746

Kansas City, Kan.:

—Kansas City Western Ry.:
One-man car operation planned in Leavenworth, Kan., n 1320

Kansas City, Mo.:
—Interurban terminal proposition before the city, n 202

—Kansas City, Clay County & St. Joseph Ry.:
Receivers d'scharged, n 1220

—Kansas City Rys.:
Annual report, 374
Ballast screening machine, *1168
Brake-heam holder for shop use, *153
Cap for waterproofing armature-bearing ends, 197
Device for remedying loose armature bearings, *369
Financial history, *607
Freight traffic in city streets, n 1366
Front-end collector's transfer, *57
Newspaper selling on cars stopped as safety measure, n 469
Overhead charges in valuation work [Kealy], *762
Publicity campaign to secure new franchise, *667; Comment, 663
Safety campaign in schools, n 163, n 468, n 713
Size of passenger's bundles limited, n 39
Stops prevent use of curtains as rain Safety campaign in schools, n 163, n 468, n 713

Size of passenger's bundles limited, n 39
Stops prevent use of curtains as rain shields, n 239
Storage hattery marker-lights for emergencies, 198
Suburban fare case, n 1180
Theft of lamps prevented by use of special lamps, 145
Track construction and maintenance methods and costs, *430
Traveling instructors for platform men introduced, n 40
Ware increase, n 1125
Welding of broken sections of trolley poles, 198
Welfare work, 670
Wheel flange contour changed, *240
Kentucky Traction & Terminal Co. (See Lexington, Ky.)

Lake Erie, Bowling Green & Napoleon Ry. (See Bowling Green, Ohio)
Lake Erie & Northern Ry.:
—Regenerative, d.c. locomotives [Whittaker],
Lake Shore Elect. Ry. (See Cleveland, O.)
Lamp for tunnel inspection work [Thayer],
*1117

Lamp shade and socket combined (Central), Lamp thefts prevented by special design, Kansas City Rys., 145

Legal: Abandonment of service not allowed, Hamden-Jackson Line, Hocking Valley R.R.,

Legal:

—Abandonment of service not allowed, Hamden-Jackson Line, Hocking Valley R.R., n 1318

—Commission's authority upheld by Colorado Supreme Court, n 1362

—Company not liable for acts of employees off duty, Massachusetts Supreme Court, n 351

—Denver (Col.) & South Platte Ry. fare case, Supreme Court upholds State Commission [Wells], 96

—Experience ordinance prevents operation of cars during strike in Yonkers, N. Y., 199; Comment, 169; Held unconstitutional, n 1216

—Experience ordinance repealed in Mount Vernon, N. Y., n 740

—Interurans classed as railroads and vehicles should stop before crossing tracks, California court decision, n 1320

—Jitney buses classed as public conveyances by insurance company, n 279

—Majority stockholders guardians of minority interests, New York Supreme Court decision, 1128

—New Jersey jitney law upheld by court, n 1131

—New York commission's right to order improvements upheld, n 946

—Paving suit won by Third Avenue Ry., New York City, n 1217

—Regulation by law of motor vehicle traffic in Seattle, Wash, [Falknor], 349; [Winsor], *874; [Brown], 876

—Toledo, O., newspaper fixed for interference with court's 3-cent fare injunction, n 1315

—Transfer regulations, Publication ordered by court, Buffalo, N. Y., n 996

—Vancouver, Can., Liability in runaway freight car case, n 537

—Vorkmen's compensation laws interpreted by recent court decisions, Comment, 131

Legislation:

—Accident liability legislation in Massachusetts, 721

—Colorado, Free transportation made unlawful.

Accident liability legislation in Massachusetts, 721 -Colorado, Free transportation made unlawful,

-Accident liability legislation in Massachusetts, 721
-Colorado, Free transportation made unlawful, n 122
-Control of vicious legislation [Budd], 63
-Eight-hour law, Clause exempting electric railways, n 404, 441
-Federal inquiry into railway transportation problems provided for, n 157
-Foreign trade should be fostered by passage of Webb bill, Comment, 1187
-New Jersey's compensation law [Tynan], 870
-Ohio's compensation act [Green], *868
-Railroads object to competitive bidding clause in Clayton act, n 159
-Strike prevention by federal legislation, Comment, 1187
-Workmen's compensation laws interpreted by recent court decisions, Comment, 131
-Zone system legislation for second class mail matter undesirable, Comment, 1282
-Lehigh Valley Transit Co. (See Allentown, Pa.)
-Lemoyne, Pa.:
-Valley Rys.:
-Commission orders fumigation of cars and increased schedule, n 163
-Lethbridge Municipal Ry.:
-Annual report, 417
-Lewiston, Augusta & Waterville Street Ry.:
-Fare zones adjusted by commission, *180
-Lexington, Ky.:
-Kentucky Traction & Terminal Co.:
-Annual report, 991
-Lighting of cars:
-General discussion on modern practice, 610
-Maintenance of lamps, Los Angeles Ry.
-(Clarkel, *107
-Safety-switch for lighting circuits (Krantz), 324
-Switch of inclosed, safety type, *943
-Voltage regulating system on Milwaukee
-Northern Ry., *1258
-Lighting protection:
-Arresters of condenser type (Westinghouse), *112
-Car lightning arresters: Installation and maintenance [Parsons], *502
-Condenser type car lightning arresters
-Electrolytic arresters of new type (Westinghouse), *240
-Fundamental theory and its application

Electrolytic arresters of new type (Westinghouse), *240
—Fund-mental theory and its application [Newton], 1246
Lima, O.:

and its application

-Western Ohio Ry.: Sale of energy along interurhan lines,

Lincoln, Ill.:

Lincoln Railway & Heating Co.:
Service abandoned, n 1180

Loading limits for cars:
—Chicago, Ill., Limits proposed by B. O. S. E.,
*274

Loading limits for cars: (Continued)

Loading limits for cars: (Continued)

—Principles of car loading as applied in Rochester, N. Y. [Arnold], *1240

—Washington, D. C., Commission sets standards, 419, 951

Locknut of new design (Industrial Development Corp'n.), *459

Lockport, N. Y.:

—Niagara & Eastern R.R.:

—Certificate for new line denied, n 944

Locomotives:

—Axle-mounted armatures discussed by Master

Certificate for new line defined, in 243
comotives:

Axle-mounted armatures discussed by Master
Mechanics' Association, 12

—C., M. & St. P., Regenerative, axle-mounted-motor locomotives, "888; Comment,
861, 1004, 1090

—Chicago, Lake Shore & South Bend freight
locomotives, *1018

—Design of electric locomotives [Batchelder],
977; [Quereau], 1203

—Formulas for tonnage capacities of interurban locomotives, 306

—Fort Dodge, Des Moines & Southern R. R.
freight locomotives, *344

—History of multiple-unit control [Kennedy],
1114

Freight locomotives,
freight locomotives,
freight locomotives,
Illistory of multiple-unit control [Renath 1114]
North Eastern Ry., England, 1500-volt d.c. design for freight service, 4; Correction, 157
Regenerative d.c. type on Lake Erie & Northern Ry. [Whittaker], *730
Relation of tractive effort to coefficient of adhesion, (omment, 342

Toledo (O.) & Western R.R. [Swattz],
*1056

adhes.on, Comment, 3
—Toledo (O.) & Western
*1056
London. (See Great Britain)
Long Beach, Cal.:
—Jitney operating company

Long Island R. R.:

—Jitney operating company formed, n 1223
Long Island R. R.:

—Accidents at crossings, n 249

—Coasting recorder maintenance [Bleckwedel],

*983

Snockess crossing operation (Cobb),

*733

Louisville & Southern Indiana Tr. Co. (See New Albany, Ind.)

Louisville, Ky.:

—Louisville Ry.:

Baseball transfer designed to save conductor's time, *274

Educational exhibit showing railway developments, n 1263

One-ton line truck (Smith Form-a-Truck), *505

Wage increase, n 509

Low tension d.c. railways:

—Reminiscences of B. & O. electrification [Kennedy], 26

M

McAlester, Okla.:

— Jitney operations restricted, n 81

— Pittsburgh County Ry, takes over railway
property of Choctaw Ry. & Ltg. Co., n Macon, Ga.:

—Macon Ry, & Lt. Co.;

Armature buggy, *457

Mahoning & Shenango Ry. & Lt. Co. (see Youngstown, O.)

Mail (see Freight and express)

Youngstown, ...,
Mail (see Freight and express)
Maine:

—Public Utilities Commission:
Fare zones adjusted on Lewiston, Augusta & Waterville Street Ry., *180
Maintenance records and costs:

—Double-trolley-wire system maintenance costs, Havana, Cuba, *367
—Frogs made of track-scrap in Rochester, N. Y., at low cost [Benham], *408
—Lamp maintenance on Los Angeles Ry. [Clarke], *107
—Method of keeping maintenance costs in Oakland, Cal. [Miller], *312
—Mileage allowances in motor maintenance, New Brighton, Pa. [Boyce], *479
—New York Central R.R. electric locomotives maintenance costs, 1204
—Philadelphia (Pa.) subway unballasted track, maintenance costs [Twining], *481
—Self-propelled tower wagon, operating costs, Union Ry. N. Y. City [Kent], *90; Comment, 89
—Substation, maintenance data on Illinois Traction System [Leisenring and Coe],

Comment, 89

-Substation, maintenance data on Illinois
Traction System [Leisenring and Coe],
*352; Comment, 342

-Track and pavement costs in Kansas City,
Mo., *430

National Safety Council: (Continued)

Maintenance records and costs: (Continued) Maintenance records and costs: (Continued)

— Units for comparing track maintenance costs (see Track maintenance)

Manchester, N. H.:

— Manchester & Derry Street Ry.:

Eight-cent fare unit authorized, 952

— Manchester & Nashua Street Ry.:

Seven-cent fare authorized by commission, 851

— Manchester Tr., Lt. & Pr. Co.:

Future status of the street railway [Jones], 1157

Manganese steel welding ["Way Engineer"],

*27

Manila, P. L.: Manila, P. I.:

—Manila Elect. R.R. & Lt. Corp'n.:
Financial statement, 465
Olfers use of pulmotor to city, n 100 Maps: — Chicago, Ill., Rapid transit routes, 1198 — Chicago Surtace Lines, 213 — Fort Dodge, Des Moines & Southern R.R., 345 345
—Rochester, N. Y., Street car lines, 1238, 1239
—Swiss Federal Rys., St. Gothard line, 225
Marion, O.:
—Marion Street Ry.:
Strike, n 1217
Market conditions: Marion, O.:

Marion Street Ry.:

Strike, n 1217

Market conditions:

Brakes (hand), 1372

Copper, 127, 239, 704, 1046, 1087, 1324, 1373

Electrical exports, 1373

Heating equipment, 1372

Insulators, 1045

Iron and steel, 127 1046

Lumber, 381

Motors and control, 703

Paints and enamels, 859

Pipe, steel, 473

Rails, 1087, 1372

Signals, 1324

Ties, steel, 473

Track grinders, 1324

Ventilators, 957

Market conditions, Interviews on:

Adams, A. M., 1184

Boyer, Warren L., 1184

Boyer, Warren L., 1184

Drew, James II., 1086

Englund, A. H., 1277

Fay, John L., 1185

George, II. H., 1227

Grayson, F. O., 1001

Hammond, W. S., 1372

Hurley, Edward N., 1000

Kilburn, John B., 1045

LeGrand, Nic., 1135

Marshall, B. G., 1277

Ohmer, John F., 1229

Pearson, J. A., 1229

Pearson, J. A., 1227

Price, E. C., 1229

Radford, Robert, 1278

Rhea, Frank, 382

Rice, E. W., Jr., 559

Sheer, A., 1228

Stigall, E. E., 1085

Valentine, Langdon B., 1045

Vogel, E. W., 1185

Massachusetts:

Financial relief case, Boston Elevated Ry., *671, 721, n 741, 852, n 991, 1077, 1201, n 1219, 1267; Comment, 665, 1168

Gas & Electric Light Commission:

Interlocking directorates disapproved, n 1363

Public Service Commission:

Bay State fare case (see Boston, Mass.)

Boston drawbridge accident report, 1103; Safety regulation, 146

Boston Elevated Ry., Additional cars and track laying ordered, n 162; Findings in service investigation, n 513

One-man car of Bay State Street Ry. approved, n 911

—Six-cent fare allowed in Randolph, Mass., n and track laying ordered, n 162;
Findings in service investigation,
n 513
One-man car of Bay State Street Ry.
approved, n 911
—Six-cent fare allowed in Randolph, Mass., n
469, 553
—Six-cent fare allowed Massachusetts Northeastern Street Ry., 951, 1038; Comment, 1003
Massachusetts Northeastern Street Ry. (see
Haverhill, Mass.)
Massachusetts Street Railway Assn.:
—December meeting, 1337
Master Mechanics Ass'n:
—Axle-mounted armatures, Discussion, 12
Memphis, Tenn.:
—Memphis Street Ry.:
Company publication inaugurated, n 294
Strike, n 202
Wage increase, 291
Meters (see Power stations and equipment)
Metropolitan Street Ry. (see New York City)
Mexico, Mex.:
—Mexico Tramways:
—Mexico Tramways:
—Mexico Tramways:
—Mexico Tramways:
—Peright locomotives, *1018
Pantograph collectors shifted to give
better operation, 1165
Rigid car inspection methods [Wilcoxon], *1305
Milwaukee Northern Ry. (see Cedarburg, Wis.)

Milwaukee, Wis.:

—Milwaukee Elect. Ry. & Lt. Co.:
Sealed fuse cabinet on cars [Mullett],
*29 Sealed tuse cabinet on cars [Mullett],
*29
System of medical examinations of employees [Lemon], 494
Track standards, *198
Welfare association activities [Hall],
*441; Loan funds [Hall], 726
Minneapolis, Minn.:
—Minneapolis, St. Paul, Rochester & Dubuque Elect, Tr. Co.:
Receiver appointed, n 206
—Minneapolis Street Ry.:
Proposed franchise with provisions for partnership with city, 1261
Valuation report, 902
—Twin City Rapid Transit Co.:
Training platform men in handling public, 135
Missoula, Mont.:
—Missoula Electric Street Ry.: Missoula, Mont.:

—Missoula Electric Street Ry.:
Extension built in record time to secure freight business, 530

Montgomery, Ala.:

—Montgomery Lt. & Tr. Co.:
Power suit lost by railway, n 1035

Montreal, Can.:

—Montreal Tramways:
Auditional franchises proposed, n 1173, n 1217

Annual report, 465
Evolution of the P. A. Y. E. car [Gaboury], *1163

—Montreal & Southern Counties Ry.:
Construction details on 16-mile extension, *395

Motor buses: sion, *395

Motor buscs:

Design adapted for both track and road operation in California, *285; Comment, 300

Pacinc Coast railways trying out motor buscs, *314, n 515; Comment, 707

Traffic regulation, Seattle, Wash, [Falknor], 349; Tacoma, Wash, [Windsor], *874; [Brown], 876

Use as an auxiliary and feeder of electric railways, Comment, 300

Motors: —Use as an auxiliary and feeder of electric railways, Comment, 300

Motors:

—Axle-mounted type, C. M. & St. P. locomotives, *888; Comment, 861, 1004, 1090

—Cap for waterproofing armature bearings, Kansas City (Mo.) Ry., 197

—Commutating pole changes necessitated by closer gear centers [McCloskey], *408

—General discussion on modern motor design and construction, *643

—Lubrication for GE-80 motors [Elgee], *1307

—Motor capacities and car weights for representative cars, 649

—Series motors as generators, Comment, 1090

—Standardization of motor sizes, 751

—Ventilation of GE-54 motors for summer service [Wurzbach], *238

—Ventilation of GE-58 motors in Portland, Ore. [Maize], *284

Mount Vernon, N. Y.:

—Westchester Elect. R.R.:

Experience ordinance repealed, n 740

Strike, 199, *229, *484, 546, n 740; Comment, 169

Wage increase, n 75

Multiple-unit trains:

—Two-motor-car trains vs. trailers, Toledo, O., 723

Municipal ownership:

—Boston subway, Defence of policy of city ownership with private operation, 1201

—Reasonable service rates [Lippincott], 1010

—San Francisco, Cal.. Conditions of 1916 compared with 1915, 138; Comment, 130

—Toledo (O.) community traction plan, n 157, n 202, n 245, n 902, n 990, 1124

—(See also Government ownership)

Muskogee, Okla.:

—Muskogee Elect. Tr. Co.:

Strike, n 906

—Ruling on jitney bus ordinance, n 123 N

Nashville, Tenn.:

Nashville-Gallatin Interurban Ry.:
Reorganization and proposed 18-mile extension, n 34, n 248

Nashville Ry. & Lt. Co.:
Wage increase, n 463
National Association of Railway Commissioners:
Action on grade-crossing safety recommendations, n 1366

Convention at Washington, D. C., Committee reports, 1097
National Electrical Safety Code published by Bureau of Standards, n 1059
National Industrial Conference activities, 1087
National Municipal League:
Favorable report on government regulation of wages, 1200
National Safety Council:
Annual congress in Detroit, Mich., n 694, n 887; Proceedings, 930

Annual report, 493

—Fire and accident prevention day, Advertis-ing poster, *536 Near-side stop (see Stopping of cars) Nebraska: Near-side stop (see Stopping of cars)
Nebraska:

—Railway earnings show decrease in 1915, n
334
New Albany, Ind.:
—Lousville & Southern Indiana Tr. Co.:
Near-side stop adopted, n 1179
Newark, N. J.:
—Public Service Ry.:
Market conditions discussed by officials,
1227
New Jersey's compensation law [Tynan], 870
Political position defended, n 1171;
Comment, 1187
Public relations improved by proper
service [Wakelee], 1095
Rerouting of traffic permitted by Newark Terminal [Donecker], *1/3;
Comment, 169
Schedule-makers,
[Donecker], *795
Tribute to N. W. Bolen, *448
New Bedford, Mass.:
—Union Street Ry.:
Single-truck car operation sustained by
commission, 335
New Brighton, Pa.:
—Beaver Valley Tr. Co.:
Maintenance record system [Boyce],
*479
Safety-first publicity work, *718
New England Street Railway Club: Beaver Valley Tr. Co.:

Maintenance record system [Boyce],

*479

Safety-first publicity work, *718

New England Street Railway Club:

—Annual outing, *678

—Electric locomotive performance, on C. M.

& St. P. Ry. [Hill], 1351

—November meeting, 1157

New Hampshire:

—Public Service Commission:

Eight-cent fare unit allowed Manchester & Derry Street Ry., 952

Six-cent fare authorized on Massachusetts Northeastern Street Ry., 1038;

Comment, 1003

New Haven, Conn.:

—Connecticut Co.:

Rebuilt carbody made of two singletruck units, *1069

Statistician's work in railway companics [Jones], *777

Trustee appointments, n 1174

Use of power-driven devices desirable in maintenance work [Harte], 278

New Jersey:

—Financial and operating statistics for electric railways, 992

—Itiney law upheld by court, n 1131

—Public Utilities Commission:

Burlington County Transit Co. fare case, n 81

Trenton & Mercer Co. Tr. Corp'n, fare case, n 80, n 1131

New Jersey & Pennsylvania Tr. Co. (see Trenton, N, J.)

New Orleans, La.:

—Jitney ruling, n 124

—Local public utilities board created by legislature, n 203

New Yerk Central R.R.:

—Experiences with axle-mounted armatures, 12

—Locomotive maintenance costs [Quereau], 1204

—Nickel Plate R.R. sold to Cleveland interests, n 113

—West Side. New York, improvement plans — Locomotive maintenance costs [Quereau], 1204

— Nickel Plate R.R. sold to Cleveland interests, n 113

— West Side, New York, improvement plans indorsed by Chamber of Commerce, n 74

New York, Chicago & St. Louis R.R.:

— Election of officers, n 158

— Sale of stock to Cleveland interests, n 113

New York City:

— Brooklyn & North River R.R.:

Strike, *229, 275

— Bureau of Franchises, Annual report, 399

— Doherty, H. L., & Co.:

Meeting of managers in Toledo, O., 866

Observations of traveling track specialist [Swartz], 717

Traveling-experts, Plan to promote efficient management, *491; Comment, 476

— Fifth Avenue Coach Co.: cient management, *491; Comment, 476

Fifth Avenue Coach Co.:
Fair play for claim agents and claimants [Carson], 105

Hudson & Manhattan R.R.:
Differences with employees settled, n 852, n 906
Life insurance plan for employees, 553

Interborough Consolidated Corp'n.:
Suit to force receivership, n 1268

Interborough Rapid Transit Co.:
Annual report, 694
Bonds for 150-lb. third-rail, *940
Dynamite exploded in subway by strikers, n 947, n 1034, n 1075;
Comment, 1003
Employees' grievance committee organized, 371
Individual working agreements for employees, 413: Cause strike, *449;
Comment, 427, 707
Queensboro subway, Grand Central to Queens Plaza, placed in operation, n 1033

New York City:
——Interborough Rapid Transit Co.: (Continued) Rubbish removal from subways, 76
Strike, *229, 277, *449, *484, 546, n
692, n 905, n 947, n 1034; Comment 427, 476, 521, 523, 706, 1004
Third rail of 150-lb, type, *543
Traffic increase during June, 1916, n Traffic increase during June, 1916, n
122
Wage mereases, *232, 413
—Isles of safety, Unfavorable criticism, n 163
—Manhattan & Queens Tr. Corp.:
Insurance policies for employees, n 1361
—Metropolitan Street Ry.:
Suit against New York Rys., 1220
—New York & Queens County Ry.:
Employees grievance committee organized, 371
Strike, *229, 275, 546
—New York Municipal Ry. (See Brooklyn, N. Y.)
—New subway system:
Cost will execed estimates (P. S. C. report), n 115
(See also Interborough Rapid Transit Co.; New York Municipal Ry.)
—New York Rys.:
Annual report, 907
Employees' grievance committee organized, 371
Individual working agreements with employees, *449, 507; Comment, 427, 707
Statistics of surface car delays, 251
Strike *229 275, 327, 328, 370, *449 Individual working agreements with employees, *449, 507; Comment, 427, 707

Statistics of surface car delays, 251
Strike, *229, 275, 327, 328, 370, *449, *484, 546, in 692, in 905; Comment, 225, 427, 476, 521, 523, 663, 706
Traffic increase during June, 1916, in 122
Wage increases, *229, 507

—Public Service Commission:
Bribery charge pressed against ex-commissioner, in 1362
Brooklyn car and service order, 1317
Court upholds right to order improvements, in 946
Engineering feats necessitated by subway work, 493
Fender indorsed for cars, in 906
Railways must make yearly inspection of bridges, in 306
Report of passengers carried yearly, 994
Strike settlement activities, *229, 275, 327, 329, 370, *484, 507, 546; Comment, 255, 299, 476, in 692
Thompson committee, Review of work, in 73
Turn-back car case, in 81, in 162
—Republic Ry, & Lt. Co.:
Annual report, 36
—Richmond Lt. & R.R. Co.:
Strike, 275
—Second Avenue Ry:
Annual report, 743
Coasting contest, in 24
Financial loss caused by strike, in 1177
Motor bearing babbitting practice [Johnson], *237
Paving suit won, in 1217
Strike, *229, 275, 328, 370, *484, 507, 546, in 692, in 905, 1177; Comment, 214, 255, 299, 476, 521, 523, 663, 706
Wage increase, in 546
Westchester Electric R.R. (see Mount Vernon, N. Y.)
Yonkers R.R. (see Yonkers, N. Y.)
—Union Ry:
Self-propelled tower wagons [Kent], **290; Comment, 890. Vernon, N. Y.)
Yonkers R.R. (see Yonkers, N. Y.)

—Union Ry.:
Self-propelled tower wagons [Kent],
*90; Comment, 89
Strike, *229, 275, *484, 546, n 905;
Comment, 521
Trolley wire performance [Kent], *540

—United Gas & Electric Corp'n.:
Annual report, 76
—White, J. G., Co.:
Financial statement, 36
Preparedness, Efficiency in [White], 106
New York Electric Railway Ass'n:
—Committee appointments, 925
—Insurance methods under workmen's compensation law, 60; Comment, 47
—June meeting, Paper [Bellinger], *18; Report of committees, *20; Discussion, 22
—Preparedness, Discussion of, Comment, 45
—Presidential address [Dempsey], 15
New York, New Haven & Hartford R.R.:
—Automatic-stop development by special department, n 24
New York State:
—Public Service Commission (Second District):
Safety conference in Rochester, n 1221
Fare increase on Albany-Troy line detrict):
Safety conference in Rochester, n 1221
Fare increase on Albany-Troy line denied, 62; Comment, 45
—Organization and work of commission, *1330; Comment, 1328
New York State Rys. (see Rochester, Syracuse and Utica)
Niagara & Eastern R.R. (see Lockport, N. Y.)
Niagara Falls, N. Y.:

Norfolk, Va.:

— Franchise negotiations, n 115, n 210, n 331, n 460, n 1035

Norfolk & Western Ry.:

— Company-built houses for employees, n *194

Northern Electric Ry. (see Chico, Cal.)

Northern Ohio Tr. & Lt. Co. (see Akron, O.)

Northern Ohio Tr. & Pr. Co. (see Toledo, O.)

Northern Ohio Tr. & Lt. Co., (see Toledo, O.)

Northern Ohio Tr. & Lt. Co., (see Toledo, O.)

Norwich, Conn.:

— Norwich & Westerly Tr. Co.:

Operation comes under J. G. White

Management Corp'n., n 35

— Shore Line Elect. Ry.:

Operation comes under J. G. White

Management Corp'n., n 35

Purchase of several Connecticut properties, n 120

Norwood, Canton & Sharon Street Ry. (see Canton, Mass.) O Oakland, Cal.:

Oakland, Antioch & Eastern Ry.:

Method of keeping maintenance costs [Miller], *312

San Francisco-Oakland Terminal Rys.:

Annual report, 1363

Resettlement franchise, 460, 1071, n

*1096 School fares held discriminatory by commission, n 1223
Vehicles should stop before crossing interurban tracks, Court decision, n 1320
Ogden, Utah:
Ogden, Logan & Idaho Ry.:
Ventilation of GE-54 motors for summer service [Wurzbach], *238 Ohio:

—Public Service Commission without jurisdiction to prevent abandonment of line,
697

— electric railways intion to prevent abandonment of line, 697

Tax assessments on electric railways increased, n 77
Ohio Electric Ry. (see Springfield, O.)
Omaha, Neb.:

Omaha & Council Bluffs Street Ry.:
Metal shearing machine with air cylinder attachment, *1027
Portable fuel-oil furnace for shop use, *368
One-man cars:

Bay State Street Ry. design approved by commission, n 911

Bristol (Tenn.) Traction Co. converts cars for one-man operation, n 39

Design and operation of [Cass], 1194

Field of one-man cars and experience of Southern Public Utilities Co. [Ervin], *144

Fort Worth, Tex., Experimental operation Field of one-man cars and experience of Southern Public Utilities Co. [Ervin], *144

Fort Worth, Tex., Experimental operation begun, n 1179

Illinois Circuit Court sustains permit granted to East St. Louis & Suburban R.R., n 123

Illinois Traction System design, Details of construction, *864

Leavenworth, Kan., Necessitated by reduced traffic, n 1320

Clagansport, Ind., strike caused by one-man cars, n 156

Isame not indicating reduced service wanted, Comment, 476

Names suggested [A Friend], 539; [Le Grand], 1114; [Lipps], 1064; [Livers], 726; [Trathen], 1064

Operating experience in Fort Worth, Tex. [Beck], 1195

Puget Sound Tr., Lt. & Pr. Co granted one-man car permits for two lines, n 123

Report of committee on transportation engineering, 827

Seattle, Wash., Experimental operation authorized, n 40

Tacoma, Wash., operation begun, n 208

Topeka, Kan., rebuilt car, *1028

Operating records and costs:

Bay State Street Rv., Data on increased cost of service, *671

Chicago Loop district operating data. *271

Comparison of power plant operating data, 829

Gasoline road-roller operating costs [Cram], *1163

Operating records and costs: (Continued)

—System of keeping substation operating records on Illinois Traction System [Leisenring and Coe], *352; Comment, 342

Operation of cars and fundamentals in energy saving [Arthur], 397; Comment, 385

Oregon:

—Public Service Commission:

Commissioner makes plea for investors, n 159

Overhead contact system:

—Aluminum messenger with steel contact wire, Lake Eric & Northern Ry., *1353

—Catenary construction, Reinforcement of splices [Harding], *684

—Copper-clad steel wire, Properties and method of manufacture (Copperweld), 409

—Double trolley-wire problems in Ilavana, Cuba, *367

—North Eastern Ry., England, 1500-volt d.c. catenary construction, *4

—Trolley shoe practice (Miller), *504

—Trolley suspension bracket arms of unusual length [McKelway], *684

—Trolley wire maintenance and inspection (M. Y.) Bridge [McKelway], *237

—Trolley wire maintenance on Union Ry., N. Y. City [Kent], *540

Owl cars:

—Extra fare charged by many railways, 146 Owl cars: Extra fare charged by many railways, 146
Pittsburgh fare case (See Pittsburgh, Pa.) P

Operating records and costs: (Continued)

Pacific Claim Agents Ass'n:

—Annual convention at Tacoma, Wash.:

Proceedings, 307; Papers [Boynton],
309; [Browne], 348; [Coffin], 308;
[Falknor], 349; [Hamilton], 350;
[Handlon], 310; [Lee], 309;
[Lonergan], 310

—Safety first training for school children
[Henry], *437; Comment, 428
Pacific Electric Ry. (see Los Angeles, Cal.)
Pacific Gas & Elect. Co. (see Sacramento, Cal.)
Paints and painting:

—Dipping equipment for painting car fenders ints and painting:

—Dipping equipment for painting car fenders
[Ebeling], *321

—Enameling vs. painting of cars [Valentine],
1045; [Hemming], 1208

—Paint gun, Application to railway work
(Spray Engineering), *410 (Spray Engineering), *410
Pavement:

—Costs a burden on car riders, Comment, 1089
—Foundation of old sandstone blocks, Topeka, Kan, *941
—Grouting tool used in Brooklyn, N. Y. [Cram], *1065
—Measuring granite block yardage by weight in Cleveland, O., *410
—Pitch-nouring cone, Brooklyn, N. Y. [Cram], *1255
Pennsylvania:
—Public Service Commission:

Jitney certificate requirements, n 1222, n 1271

Jitneys classed as public service companies, 513 Jitneys classed as public service companies, 513
Toilets on interurbans opposed by railways, 1129
Pennsylvania R.R.: Pennsylvania R.R.:

—Correspondence courses conducted for employees, n 96

—Historical pamphlet issued. n 1342
—Philadelphia-Paoli line, Voltage regulation by automatic tap-changers on transformers, *732
—Safetv record, 179
—Signal-light aspect colors changed, 480
Peninsular Ry. (see San Jose, Cal.)
Pennsylvania Street Railway Ass'n:
—Convention in Philadelphia, Pa., Proceedines, 1242: Papers [Bowman], 1292; [Chamberlain], 1291; [Clinch], 1292; [Chamberlain], 1291; [Clinch], 1292; [Hoffman], 1244; [Jack], 1294; [McCahill], 1248; [Newton], 1246; [Payne], 1290; [Spahr], 1245
Pennsylvania Welfare and Efficiency Conference, Annual meeting, 1131
Peoria, III.:
—Illinois Traction System:

Bond shield to prevent theft, *286
Claim department's organization and operation [Whitmore], 1159
Freight service rearrangement plans, n 1319
Freight traffic development, *49; Comment, 46, 129
Grain elevator built at Evans. Ill., n 943
Interurban fare changes, 1320
One-man cars, Details of construction,

Interurban fare changes, 1320 One-man cars, Details of construction, *864 Publicity through attractive advertising, *715 St. Louis (Mo.) fare case, 995, 1222, n 1362; Details of final ruling, 1269

*220

—Relation of investment to traffic density [McGrath], *58; Comment, 46

—Rush-hour service costs, *842

—Signal performance on Scranton & Binghamton Ry., *388 -Aerial tramway over whirlpool rapids, *1022 -Niagara Gorge Ry.: Wage increase, n 549 (Abbreviations: * Illustrated. n Short news item.)

—Gasoline road-roller operating costs [Cram],
*1163

*1163

Influence of size of car body on operating costs, 586

Obsolete equipment expensive to operate. Comment, 1328

One-man car operation in Fort Worth, Tex. [Beck], 1195

Operating records over crossovers with double and single berths, Chicago, Ill., *220

Publicity: (Continued)

—Public relations improved by publicity [Lee], 809

—Public Service Ry. of New Jersey forced to refute election attacks, n 1171; Comment, 1187

—Selling points to be considered in planning campaigns, Comment, 171

—Value in public relation [Thompson], 1346

—Value in public relation [Thompson], 1346

—Value in publicity, 705, 753, 863, 919, 961, 1005, 1049, 1091, 1141, 1189, 1233, 1283, 1327

—Claim agents' relations with the public [Lonergan], 310

—Code of ethics and policies of Pittsburgh (Pa.) kys., 712; Comment, 706

—Company publications (see Publicity)

—Education of public by Harrisburg (Pa.) strikers, Comment, 384

—Good-will tostered by courteous treatment of public [Elmendorf], 1301

—House-to-house canvass for increased business in Sedalia, Mo., *140; Comment, 129

—Improvement of public relations [Coates], 1154 Power generation:

—Interconnecting of power supply systems,
Economies effected [Insull], 1160

Power stations and equipment:

—Barometric condenser of new type (Ingersoll-kand), *110

—Boilers. (See Boilers and equipment)

—Choke coil of air-cooled design (Westing-house), *369

—Controller for large d.c. motors (Industrial controller Co.), *1120

—Flow-meter with alarm attachment (Spray Engineering), *326

—Fort Dodge, Des Moines & Southern R.R., Steam and electrical equipment, *344

—Holyoke, Mass., Steam generating equipment, *1190

—Impregnated stone for switchboards (Lin Stun Co.), *1168

—Meters, Astatic and other construction features in recent types (Hickok Electinst Co.), *1260

—Meters, Demand type (General Electric), *1310

—Name plates for machine panels and hear dies of high tension switches [Tanis]. Peoria, Ill.:
——Illinois Traction System: (Continued) Publicity: (Continued) Power generation: Sale of evergy along interurban lines, Shop jobs for substation attendants' spare time, *322; Comment, 342
Substation maintenance costs and method of keeping records [Leisenring and Coe], *352; Comment, 342 Lima (Callao) Light, Power & Tramways
Co.:
Financial statement, 550 Philadelphia, Pa.:

—American Kys.:

Unit for comparing track maintenance costs [keen], 682

—Philadelphia kapid Transit Co.:

Annual report, 247

Employees' co-operative plan [Conway], *968; Comment, 960

Fire ordinance, Benents of co-operative plans [Bowman], 1292

Maintenance record of unballasted track in subway [Twining], *481

Operating agreements with city, *1016, 1122 House-to-house canvass for increased business in Sedalia, Mo., *140; Comment, 129

Improvement of public relations [Coates], 1154

Kansas City, Mo., Campaign to secure new tranchise, *667; Comment, *663

Newspapers' attitude toward railways [Carraway], 936

Mutual understanding, Comment, 1327

Outhne of methods for bettering public relations, 386; Comment, 383

Pittsourgh, Pa., posters and historical parade, *1338

Proper attitude of company important [Wakeled, 1095

Publicity and the ills of street railways [Paynel, 1290

Publicity work, Policy of frankness necessary [Lee], 809

Railway officials as citizens, Comment, 87

Selling securities to patrons to better public relations, Iowa ky. & Lt. Co., *356; Byllesby properties, *264, n 854; Comment, 256

Signs on ears to reduce rowdyism, *25

Support of local business men, Comment, 427

1en commandments for improving public relations, Doherty properties, 866

Training platform men in handling public at Minneapolis and St. Paul, Minn., 135

Valuable addition to public relations code [Pord], 448

Value of publicity [Thompson], 1346

Work of A. E. R. A., 809

Public service and regulative commissions:

Prederal vs. state regulation, 1097, 1100

Louisiana creates local public utilities board for New Orleans, n 203

Organization and work of New York Commission, Second District, *1330; Comment, 1328

"Public Service Reports Annotated" mergered with "Official Public Service Reports," n 145

Public service corporations:

Regulation of relations between utilities and employees, National Municipal League report, 1200

Public Service Ry. (see Newark, N. J.)

Puget Sound Elect. Ry. (see Tacoma, Wash.)

Puget Sound Elect. Ry. (see Tacoma, Wash.)

Puget Sound Elect. Ry. (see Tacoma, Wash.)

Puget Sound Elect. Ry. (see Tacoma, Wash.) -Name plates for machine panels and han-dles of high tension switches [Tanis], *283 Ohio State Power Co.'s plant at Fremont, *1343

—Oil circuit breakers with tank-removing device (General Electric), *287

—Oil-switch tank lifter (General Electric), *241

—Overload relay for high voltage a.c. circuits (Westinghouse), *942

—Relay of induction, selective overload type (General Electric), *901

—Report of A. E. R. E. A. committee on power generation, 828

—Reverse-phase relay (General Electric), *737

—Steam flow meters, Application to reciprocating engines, Cleveland, O. [Phillips], *728

—Steam turbines used to drive small auxil-Proposal to operate new rapid transit lines, 1359 Safety campaigns in Philadelphia, Pa. [Clinch], 1292 Safety campaigns in Philadelphia, Pa. [Clinch], 1292
Strike, 288
Wage increase, n 415
Report on rapid transit progress, *1016, 1359
Philippine Islands (see Manila, P. I.)
Pittsburgh, Pa.:

—Pittsburgh Rys.:

Education of public, Posters and historical parade, 1338
Claim work principles [Rice], *878
Code of cthics and policies, 712; Comment, 706
Financial statement, n 159
Owl-car fare case, n 39, n 79, n 699, 856, n 1179; Comment, 45
Safety-lirst exhibit, 104

—Report on improved city traction, n 905
Pittsfield, Mass.:

—Bershire Street Ry.:
Hearing to force operation of LeeIluntington line, n 746
One-year wage agreement signed, n 35
Poles:
—Blasting pole holes in clay [Squires], *29 Steam flow meters, Application to reciprocating engines, Cleveland, O. [Phillips], *728

Steam turbines used to drive small auxiliaries (General Electric), 1211

Stokers (See Boilers and equipment)

Switchboards, Design having all live parts on back of board (General Electric), *1260

Switchboard with special safety feature (General Electric), *241

Turbo-generators. (See Turbo-generators and equipment)

Preparedness:

Chicago, North Shore & Milwaukee R.R., Handling of soldiers, *1295

Efficiency in [White], 106

Electric railways' service in war time, Comment, \$62

Mexican trouble causes enlistment of railway men, n 33

Mobilization of electric railways discussed, Meeting of New York Elect, Ry. Ass'n, *16; Comment, 45

Payment of salaries to National Guard members in the field, Comment, 3

Track laying rushed to accommodate mobilization of troops in Denver, Col., n 147

Presque Isle, Me.:

Aroostook Valley R.R.:
Equipment and operation of freight road, *1006

Providence, R. I.:

Jitney operation, decreasing, n 158

Publicity:

Advertisements in newspapers, Georgia Ry. Iluntington line, n 746
One-year wage agreement signed, n 35
Poles:

—Blasting pole holes in clay [Squires], *29
—Calculation of pole loads (Bates), *457
—Concrete pole design, 824
—Jack used for straightening poles (Simplex), *691
—Preservative treatment specifications, 400
—Reinforcing tubular poles internally, San Francisco, Cal. [Foster], *109
Port Arthur, Tex.:
—Port Arthur 'Tr. ('o.:

Wage increase, n 548
Portland, Me.:
—Cumberland County Pr. & Lt. Co.:
Headlight maintenance, *984
Lubrication for GE-80 motors [Elgee], *1307
Strike, n 116, n 154
Portland, Ore.:
—Jitney bus regulation, n 336, n 1081, n 1130, 1180, 1222
—Portland & Oregon City Elect. Ry.:
Franchise for bus operation proposed, n 1367
—Portland Ry., Lt. & Pr. Co.:
Annual report, 117
Claim department's relations with public [Lonergan], 310
Claim-work fundamentals [Boynton], 309
Fan ventilation of GE-58 motors [Mazel], *284 Jitney operation. decreasing, n 158
blicity:

Advertisements in newspapers, Georgia Ry.
& Pr. Co., 162

Advertising attractively, Illinois Traction
System, *715

Advertising campaign for increased business, Doherty properties, *140; Comment, 129

Advertising campaign to stimulate traffic on Chicago Elevated Rys., *359

Advertising securities to be sold to patrons, Iowa Ry. & Lt. Co., *356

Annual reports as publicity material, Comment, 129

Cartoons on publicity, 705, 753, 863, 919, 961, 1005, 1049, 1091, 1141, 1189, 1233, 1283, 1327

Company publications:
Co-operative standardization plan [11ild], *787

Denver Tramway Bulletin improved, n 1080

Editing and distribution methods, Charlotte, N. C. [Carraway] *792 Fan ventilation of GE-58 motors [Maize], *284

Financial plight to be investigated by special commission, n 989; Comment, 959

Jitney competition discussed by Commissioner Campbell, 114; Comment, 87

Jitney regulation necessary to safeguard railway investments, n 944

Shop grounds beautified by employees, *490; Comment, 475

Traffic increased by bathing beach, n 1178

Pottsville, Pa.:

—Eastern Pennsylvania Rys.: Quakertown & Delaware River R.R.:

—Change of ownership causes rumors of electrification, n 116

Quebec, Can.:

—Quebec Ry., Lt. & Pr. Co.:
Financial statement, 1037

Strike, n 508

Wage increase, 1361 Denver Tramway Bulletin improved, n
1080

Editing and distribution methods,
Charlotte, N. C. [Carraway], *792
Methods and results in Akron, O. [Braden], *791
Use and value, Virginia Rys. & Pr. Co.
[Wheelwright]. *789

—Folder advertising trolley routes, Washington, D. C. (Matthews-Northrup), *530

—Kansas City Rys., Work of publicity department, *670; Comment, 663

—London, England, advertising posters, *400

Newspapers as a medium of publicity [Carraway], 936

—New York Rys. strike advertisement, *229

—Pittsburgh, Pa., posters, *1338

—Publicity and the ills of street railways
[Payne], 1290

—Publicity campaigns, Ammunition for, Comment, 3 ---Eastern Pennsylvania Rys.:
Annual report, 1128
Power (see also Purchased power; Sale of power) Power consumption of cars (see Energy consumption)

Power distribution:

R

Rails:

Corrugation:
Chicago investigation, Effect of shape
of rail, *1012; Comment, 1004

Data sheet for investigating causes
[Cooper], 727

Effect of resilience of foundation
[Jones], *67

Remedies for [Holt], *456

-Voltage regulation by automatic trans-former-tap changers on Philadelphia-Paoli line, *732

Inclosed mounting for combination fuse and switch (Anderson-Elleon), *732

—Insulator clamp for feeder wires (Hatch), *544

-Line sectionalizing by use of transformers, Comment, 1090 -Switch of inclosed type (Western Electric), Rails: (Continued)

ils: (Continued)

-Grinding practice on Bay State Street Ry. (Seymour), 30

-Line contact with wheels desirable, (omment, 385

-Track sander (Haese Co.), *544
il joints and bonds:

-Are-welded track joints, Wilkes-Barre, Pa. [Hottman], 1244

-Bond testing outht (Roller-Smith Co.), *1167 [Hottman], 1244

—Bond testing outh (Roller-Smith Co.),

*1167

—Electric-welded joint practice in Davenport, Ia. [Smith], *68

—Joint welding practice in Youngstown, O. (Goluschmiut), *239

—Mechanical tests of rail joints, A. R. A. bulletin, *940

—Protection against theft of bonds, Brooklyn, N. Y. [McKelway], *1165

—Riveted and welded track joints, Rochester, N. Y. [Falconer], *982

—Shield for the prevention of bond thefts, Illinois Traction System, *286

—Soldered bonds, Experience in Seattle, Wash. [McHraith], *938

—Steel terminal bond of great strength [Simplex], *31

—Third-rail bonding on new rapid transit lines, Brooklyn, N. Y., *1092; [Febrey], *282

—Third-rail bonds for new subways in New York City, *940

Railway Signal Ass'n.:

—Annual convention, n 492

Randolph, Mass.:

—Bristol & Norfolk Street Ry.:

Commission allows six-cent fare, n 469, 553

Rate making. (See Appraisal of railway property)

Record forms:

—Appraisal record forms [Kuhn], *99, *315

—Car inspection record forms [Wilcoxon], *1305; [Blanchard], *1352

—Continuous inventory data sheets[Carver], *1053

—Maintenance cost-system forms, Oakland, Cal. [Miller], *312 Continuous inventory data sheets[Carver],

*1053

Maintenance cost-system forms, Oakland,
Cal. [Miller], *312

Maintenance record forms, New Brighton,
Pa. [Boyce], *479

Punch-mark system of car-shop reports in
Allentown, Pa. [Branson], *454

Special work, Method of recording [Benham], *27

Storeroom record forms [Bulkeley], *401

Substation record forms on Illinois Traction
System [Leisenring and Coe], *352;
Comment, 342

Regeneration. (See Brakes)
Repair shop equipment:

Air compressor of portable type, Benton
Harbor, Mich., *544

Armature-banding tensioner, Galesburg, Ill.,
shops, *984

Armature buggy used in Macon, Ga., *457

Brake-beam holder, Kansas City Rys., *153

Bulldozer made from air-brake cylinder in
Galesburg, Ill., *326

Circulating water pump attachment for air
compressor [Branson], *542

Commutator slotting attachment for latbe,
*368

Current collecting carriage for supplying
current to third-rail equipments [Tanis], Current collecting carriage for supplying current to third-rail equipments [Tanis], *939 *939

Dipping machine for painting car fenders of Cleveland (O.) Ry, [Ebeling], *321

Electric tractor for handling rolling stock in shop [Mills], *1209

Hoist used for unloading new cars in Detroit, Mich. [Potter], *236

Lockers of steel, Galveston (Tex.) Electric Co., *1308

Metal shearing machine with air cylinder attachment, Omaha, Neb., *1027

Pipe bender used in Galesburg (Ill.) shops, *459

Pit lighting Mounting for lames Allentang —Pit livhting, Mounting for lamps, Allentown, Pa., *545
—Portable controller for applying current to trucks, Cleveland (O.) Ry. [Ebeling], *685
—Portable fuel-oil furnace used in Omaha, Neb., *368
—Pull-in truck in use in Fort Smith, Ark. [Wright], *148
—Soldering iron with high resistance tips (Clemens Electrical Corp'n.), *1168
—Tools, Electric versus pneumatic, 976
—Tools, High-speed steel tips welded to machine tools, *1069
—Transformer for testing field coils in Atlantic City (N. J.) shops [Faber], *364
—Water heater operated by babbitting furnace, *406
—Wheel turning lathe with special face-plate lugs, Allentown, Pa., *984
Repair shop practice:
—Acetylene cutting and welding practice in Washington, D. C. [Haar], *939
—Armature bearing babbitting practice in New York City [Johnson], *237
—Armature spider repair job [Ernest], *1026
—Axles of button-end type, Method of reclaiming in Long Island R. R. shops [Mills], *193 -Pit lighting, Mounting for lamps, Allentown, Pa., *545

-Axle tests for location of defects, Anderson, Ind. [Hemming], *1025

-Babbitting axie bearings by use of special jig, Hazleton, Pa. [Brown], *1116

-Drying out motor-generator sets [Koppel], *67 Repair shop practice: (Continued) -Inspection methods, Michigan City, Ind.
[Wilcoxon], 1305
-Machining of tires in England ["Vulcan"], -Method of handling large car-remodeling 10b in Battimore, Md., '304; Comment, —Method of handling large car-remodeling job in Battimore, Md., *304; Comment, 299
—Neatness makes a more efficient shop; Comment, 4.5
—Oxy-acetylene cutting practice in San Francisco, Cal. [Legare], *108
—Sand-biasting of glass, Akron, O., *986
—Substation attendant's spare time used on small jobs, *322; Comment, 342
—Ventilation of railway motor for summer service, Ogden, Utah (Wurzbach], *238
—Welding of broken sections of trolley poles, Kansas City Rys., 198
—Workmen should know relative cost of available material (*Vulcan*1), 321
—Work reports kept by punch marks, Allentown, Pa. [Branson], *454
Repair shops:
—Lighting, Comparative maintenance costs of afferent units, 975
—Pit lighting comduit construction, Springfield, Mass., *899
Republic Ry. & Lt. Co. (See New York City)
Rhode Island Co. (See Providence, R. I.)
Richmond Lt. & R.R. Co. (see New York City)
Richmond, Va.:
—Virginia Ry. & Pr. Co.:
Annual report, 1175
Company publications, Objects and results [Wheelwright], *789
Grade cross.ng protective device (Consolidaded Car Heating Co.), *1121; Operation with signal system practical [Taurman], 1161
Large turoine installed in record time, *1308
Norfolk, Va., franchise negotiations, in 115, 1201, n331, n460, in 1035
Rail corrugation, Effects of resilience of foundation [Jones], *67
Safety-hrist week activities, in 1294
Rochester, N. Y.:
—Buffalo, Lockport & Rochester Ry.:
Reasons for defaulting interest on bonds, 333
—Improvement of street car traffic by rerouting, Arnoid's report, in 947, *1238; Comment, 1231
.New York State Rys.:
Advertising for platform men, n 1360
Controlling factors in track maintenance costs [Falconer], *499
Progs made of track-scrap by arc-welding [Benham], *407
Front-entiance, center-exit car, *570; [Cook], *1234; Comment, 1231
.Intey competition, in 39, n74, n746
Recording second-hand special work [Benham], *27
Rockland, Thomaston & Camden Street Ry.:
Wage increase, n 291
Routing of cars:
—Cheeser-Charlotte fare case, n 953
1 rack joints of riveted and welded type [Falconer], *198 -Neatness makes a more efficient shop; Com--Rubber-cutting gage for cable testing use [Mc-Kelways], *983 S

St. Joseph, Mo.:
—St. Joseph Ry., Lt. & Pr. Co.:
Car body double-deck design giving large capacity, *1030
Repair of an armature spider [Ernst], *1026 Wage increase, 1315

Sacramento, Cal:

— Jitneys withdraw because of stringent ordinance, n 420

— Pacific Gas & Elec. Co.:

Derrick car for yard and shop use, *287

Friction-clutch brake of improved design, *325

Motor buses to be operated by company, n 515

Safety First Pederation:

— Bureau of standards created, n 693

— Annual convention in Baitimore, Md., 1296

Safety Irist movement:

— California Electric Railway Ass'n sends satety appeal to automobile owners, n 294

— Circulars distributed among children by II.

M. Byllesby & Co., Cheago, Ill., n 82

— Co-operation of railways with motor vehicle owners in Tacoma, Wash. [Browne], *338

— Exhibit of Pittsburg Rys., 104 owners in Tacoma, Wash. [Browne],

"348

Exhibit of Pittsburg Rys., 104

Fire and accident prevention day, advertising poster, *536

Grade crossing safety recommendations of A. R. A., *270

Kansas City, Mo., campaign carried into schools, n 163, n 468, n 713

Manila (P. L.) Elect. K.R. & Lt. Co. offers use of pulmotor to city, n 100

Memphis (Tenn.) Street Ry, inaugurates company publication, "Safety First Topics," n 294

National Safety Council, proceedings of convention, 930

Newspaper selling stopped on cars of Kansas City Rys., n 469

Philadeiphia, Pa., Safety-first campaigns [Clinch], 1292

Portland, Ore., Work of safety commission [Coffin], 308

Precautions against accidents [Jack], 1294

Prizes awarded to Brooklyn (N. Y.) school children, n 81

Publicity campaign in Beaver Falls, Pa., *718

Safety work on electric railways, Columbus, C. [Clapp], 1110 *718

—Safety work on electric railways, Columbus,
U. [Clapp], 1110

—Street trafic regulation, Comment, 917

—Training of school children in Tacoma,
Wash. [Henry], *437; Comment, 428

Sale of power by electric railways:

—Power load developed by Fort Dodge, Des
Moines & Southern R. R., *344; Comment, 343

—Practices of interurban roads of the Cenment, 343

—Practices of interurban roads of the Central States, *920; Comment, 918

—Service standards of U. S. Bureau of Standards, 720

—(See also Purchased Power)

Sales work by personal solicitation overdone in electric railway field; Comment, 475

Salt Lake City, Utah:

—Salt Lake & Utah R. R.:

Substation for 1500-volt line [Lott], *1142

Trailer cars for summer service, *104

Twenty-mile extension, Equipment and service, *143

San Francisco, Cal.:

—Jitneys ruled from business district, n 208, n 335, n 378, n 419, n 698

—Municipal Ry.:

Extension built to avoid a hill, *179 — Jitneys ruled from business district, n 208, n 335, n 378, n 419, n 698

— Municipal Ry.:

Extension built to avoid a hill, *179
Financial statement, Comparison with 1915, 138; Comment, 130

Strike demonstration, n 203

— Traction situation not satisfactory, n 1171

— United Railroads:

Capitalization cut in half, 744

Employees loyal in spite of effort to stampede strike, n 203, n 288

Motor-driven cable-reeling machine [Foster], *192

Ownership by city proposed, n 1033

Oxy-acetylene cutting practice [Legare], *108

Paralleling of track by Municipal Railway, Comment, 1

Photography as an aid in court trials [Handlon], 310

Reinforcement of tubular steel poles [Foster], *109

Reorganization proceedings, n 205, 292, 696, 744, n 908, n 1079, n 1127

— United Railways Investment Co.:

Annual report, 1218

San Francisco-Oakland Terminal Rys. (see Oakland, Cal.)

San Jose, Cal.:

— Peninsular Ry.:

Automobiles, Adaptation to track operation, *285; Comment, 300

Schedules and time tables:

— Development or schedule engineers [Donecker], *795

— Double routed cars used to solve routing problem in Chattanooga, Tenn., *357

— Rochester, N. Y., B., J. Arnold's recommendations for improving operation, *586

Schenectady, N. Y. ---Two-car train, Influence on schedule speed,
*586
Schenectady, N. Y.:
----Schenectady Ry.:
Strike arbitration settled, Wage increase, n 549

(Abbreviations: * Illustrated. n Short news item.)

Seranton, Pa. : anton, Pa.:

-Lackawanna & Wyoming Valley R. R.:

Wage increase, n 510

-Scranton & Binghamton Ry.:

Signal system performance records,

*388 Wage increase, n 510

Scranton & Binghamton Ry.:

Signal system performance records,

*388

Seattle, Wash.:

—Jitney bus regulation by City Council, n
163, n 294, n 377, n 468, n 857

—Puget Sound Tr., Lt. & Pr. Co.:

Annual report, 464

Appraisal of property damaged in accidents [Hamilton], 350

Bonding experiences [McIlraith], *938

Effort to force extensions, n 35

Franchise case, n 904

Ileating of cars ordered by commission, n 123

Jitney regulation asked for, n 377

Low-fare case, n 377

One-man cars, Experimental operation authorized, n 40; Permits granted for two lines, n 123

Paving suit, n 1216, n 1313

Regulation of motor vehicle traffic to reduce accidents [Falknorl, 349

Service required because of jitney competition, n 124, n 163, n 295

—Railways gain over jitneys in traffic check, n 1040

—Seattle & Ranier Valley Ry.;

Franchise case carried to Supreme Court, n 246, n 1220

Operating agreement with municipal lines, n 1080

Receivership, 1037

—Seattle Municipal Street Ry.:

Financial statements, n 161; Loss shown, n 1128

—Seattle, Renton & Southern Ry.:

(See Seattle & Ranier Valley Ry.)

Traffic check on street travel, 420

Seats (see Doors, seats and windows)

Second Avenue R.R. (see New York City)

Security selling to patrons (see Public, Relations with)

Sedalia, Mo.:

—City Lt. & Tr. Co.:

Campaign to secure increased business,

*140; Comment, 129

Experience of Union Ry. (N. Y. City), with self-propelled type [Kent], *90; Comment, 189

—Light weight automobile tower wagon,

Utica, N. Y. [Throop], *364

—Motor bus service for stores department self-propelled type [Kent], *90; Comment, 89

— Light weight automobile tower wagon, Utica, N. Y. [Throop], *364

— Motor bus service for stores department [McKeen], *1068

— One-ton line truck for hilly country (Smith Forma-Truck), *505

— Uses and design of automobile types [White], *152

Shawnee, Okla.:

— Shawnee-Tecumseh Tr. Co.:

Strike, n 1126

Sheboygan, Wis.:

— Sheboygan Ry. & Elec. Co.:

Cars rebuilt for rush-hour service [Shaw], *194

Shore Line Elect. Ry. (see Norwich, Conn.)

Signals:

— Crossing protective device used by Virginia. Shore Line Elect. Ry. (see Norwich, Conn.)

Signals:

Crossing protective device used by Virginia Ry. & Pr. Co. (Consolidated Car Heating Co.), 1121; Operation with block signal system practical [Taurman], 1161

Crossing signal of closed-circuit type (Union Switch & Signal Co.), *1214

Denver & Rio Grande Ry. crossing signals (Protective Signal Mig. Co.), *151

Drawbridge signals [Johnson], 1339; Comment, 1327

Impedance bond with protecting case (Union Switch & Signal), *543

Installations on electrified sections of several steam roads (Union Switch & Signal), *404

Klavon horn used as a crossing signal during fogs in London, England, 360

Pennsylvania R.R. changes colors for fixed signal aspects, 480

Scranton & Binghamton Ry., Signal system performance records, *388

Signal lights with side indication in Los Angeles, Cal. (Union Switch & Signal), *506

Standard clearances and aspects, *826

Street semaphore signals recommended in Chicago, Ill., *183, *273 Standard clearances and aspects, *826

Street semaphore signals recommended in Chicago, Ill., *183, *273

Track circuit transformers (Union Switch & Signal), *735

Transformer for testing signal relays (Union Switch & Signal), *691

Trolley contactor system with standard as pects (U. S. Elect. Sig. Co.), *686

(See also Automatic stops)
Signs for guidance of public, Psychology in wording, Comment, 169
Single-phase railways:

Swiss Federal Rys. adopts single phase for St. Gothard line, *225; Comment, 215; Influencing factors [Arthur], 319
Skip-stops (see Stopping of cars)
Sleet cutter of semi-rotary type (Bayonet), 1358
Snow-fighting equipment should be investigated by Engineering Ass'n, Comment, 861
Snow-fighting preparedness, Comment, 1003

Snow scraper for city cars (Root Spring Scraper), *459
Society for Electrical Development:

—Poster for America's Electrical Week, *351
South American Trade, Comment, 1327
Southern Public Utilities Co. (see Charlotte, N. C.)
Southern Traction Co. (see Dallas, Tex.)
Special-work:

—Box girder foundations with wood-block filling for railroad crossings (International), *689
—Electric track switch practice in New England, *503
—Frogs made from track-scrap in Rochester, N. Y. [Benham], *407
—Recording second-hand special work [Benham], *27
—Shockless crossings with automatic control (Cobb), *733
—Specifications, 830
—Standard designs of Brooklyn (N. Y.) Rapid
. Transit Co. [Bernard], *148
—Welding manganese steel [Way Engineer], *27
Specifications, Standards in purchase of railway supplies [Twyford] *973. Comment. - Welding manganese steel [Way Engineer],
*27

Specifications, Standards in purchase of railway
supplies [Twyford], *973; Comment,
959

Spokane, Wash.:

- Washington Water Power Co.:
Financial statement, 77

Springfield, Ill.:

- Springfield Consolidated Ry. Co.:

Mating of worn gears and pinions, 286

Springfield, Mass.:

- Jitney ordinance passed, n 996

- Springfield Street Ry.:

Jitney ordinance passed, n 996

- Springfield of conduit for pit lighting,
*899

Mail carrying compensation increased,
n 1131

Wage agreement, 73

Springfield, Mo.:

- Springfield, Mo.:

- Springfield, Mo.:

- Strike follows dismissal of injunction, n 946, 988, n 1362

Springfield, O.:

- Ohio Electric Ry.:

Clearing house plan for interline traffic
accounts [Kasemeier], 1250

Handling crushed stone for use on highways, n 943
Sale of power along interurban lines,
*925

Standardization:

- Car design [Heulings], 1371 *925
Standardization:

—Car design [Heulings], 1371
—Classification of car weights for standard motors [Clardy], 283
—Manufacturers' activities in standardizing motors sizes [Lambert], 751
—Specifications for railway supplies should be standardized [Twyford], *973; Comment, 959
Statistics:

—Annual geographical analysis of railway at the standardized analysis of r -Annual geographical analysis of railway sta-tistics, 1175 -Census of electrical industries [Steuart],

- 586
-Near-side stop operation:
Advantages of [Hare], *873; [Reynolds], *872
Houston, Tex., n 1040
Jeffersonville, Ind., n 1179
New Albany, Ind., n 1179
Walla Walla, Wash., n 1223
-Skin stops: Walla Walla, Wash., n 1223

—Skip stops:

Detroit, Mich., n 123, 162, 208, 838
Recommended by Chicago Traction & Subway Commission, 1200; By B. O. S. E., *183, *218

Report of Committee on Schedules and Timetables. 838

—(See also Automatic stops)
Storage battery cars:

—Design to take current from trolley wire, Bradford (England) Tramways, n 179
Storerooms:

Strikes and arbitrations;

—Albany, N. Y., 741

—Atlanta, Ga., n 509, n 740, n 853; Disorders and trial of car dynamiters, 1262

—Bangor, Me., n 414, n 463, n 508

—British methods of handling strikes, 535

—Buffalo (N. Y.) Southern Ry., n 113, n 157, n 246, n 331, n 415, n 510

—Chattanooga, Tenn., n 372, n 415, 946

—Cumberland County (Me.) Pr. & Lt. Co., n 116, n 154

—Harrisburg (Pa.) Rys., 155, 200, 243, n 291, n 331, n 372; Comment, 384

—Holyoke, Mass., wage arbitration, n 906, 1172

—Indianapolis, Ind., 1073, 1124 —Holyoke, Mass., wage arbitration, n 906, 1172
—Indianapolis, Ind., 1073, 1124
—Indianapolis, Ind., 1073, 1124
—Indianapolis, Ind., 1073, 1124
—Industrial democracy and prevention of strikes [Weston], 1205
—Jacksonville, Fla., n 1033
—Legislation to prevent strikes, Comment, 1187
—Logansport, Ind., n 156, n 204
—Marion, O., n 1217
—Memphis, Tenn., n 202
—Mount Vernom, N. Y., 199, *229, *484, 546, n 740; Comment, 169
—Muskogee, Okla. n 906
—Mational Civic Federation plans boards of arbitration, n 1074
—New York City:
I. R. T. Co., *229, 277, *449, *484, 546, n 692, n 905, n 947, n 1034; Comment, 427, 476, 521, 523, 706, 1003
Brooklyn & North River R.R., *229, 275, New York & Queens County Ry., *229, 275, 546
New York & Queens County Ry., *229, 275, 546
New York Rys., *229, 275, 327, 328, 370, *449, *484, 546, n 692, n 905; Comment, 225, 427, 476, 521, 523, 706
Recommendation that strike arbitration Comment, 225, 427, 476, 521, 523, 706

Recommendation that strike arbitration clauses be incorporated in franchises, 329

Richmond Lt. & R.R. Co., 275

Second Avenue R.R., *229, 275, 328, *484, 546

Sympathetic general strike to aid carmen improbable, Comment, 663

Third Avenue Ry., *229, 275, 328, 370, *484, 507, 546, n 692, n 905, 1177; Comment, 214, 255, 299, 476, 521, 523, 706

Union Ry., *229, 275, *484, 546, n 905; Comment, 521

—Philadelphia Rapid Transit Co., 288

—Public utility labor disputes, Papers before Academy of Political Science, 1106; Comment, 1139

—Quebec, Can., n 508

—Railways should combine against union domination, 453; Comment, 427

—San Francisco, Cal., Demonstration by Municipal Ry. men, n 203

—Schenectady, N. Y., Arbitration settlement, n 549

—Schenectady, N. Y., Arbitration settlement, n 549

—Shawnee, Okla., n 1126 -Schenectady, N. Y., Arbitration settlement, n 549
-Shawnee, Okla., n 1126
-Springfield, Mo., 741, n 946, 988
-Strikes an unsatisfactory method of settling disputes, Comment, 341
-Trenton, N. J., Discharge of conductors sustained by arbitration board, n 34, n 156
-Wilkes-Barre, Pa., Terms of final settlement, *1312
-Wilmington, N. C. 202 **1312 — Wilmington, N. C., 202
—Yonkers (N. Y.) R.R., 199, *229, *484, *546, n 740; Comment, 169, 299
Storage yards. (See Carhouses and storage yards)
Substations and equipment:
—Choke coil of new air cooled design (Westinghouse), *369
—Jobs for attendants' spare time, *322; Comment, 342
—Maintenance costs and method of keeping records on Illinois Traction System [Leisenring and Coe], *352; Comment, 342
—Name plates for high tension switch handless of the state of the Name plates for high tension switch handles and machine panels [Tanis], *283

North Eastern Rv., England, Inclosed rotary converters, *4

Oil circuit breakers with tank removing device (General Electric), *287

Oil-switch tank lifter (General Electric), *241 "241 talk Mich (deferal Electric),

Overload relay for high voltage a.c. circuits.

(Westinghouse), "942

Relay of induction, selective, overload type.

(General Electric), "901

Rotary converter collector rings, Method of renewal [Brown], 30

Salt Lake & Utah R.R., 1500-volt substation [Lott], "1142

Wirine of transformers using special outlets.

(Crouse-Hinds), *943

Switchboards (see Power stations and equipment)

Switzerland:

Switzerland:

Swiss Federal Rys.: Switzerland:
Swiss Federal Rys.:
Single-phase adopted for St. Gothard line, *225; Comment, 215; Influencing factors [Arthur], 319
Syracuse, N. Y.:
Lake Shore & Northern R.R.:
Independent receivership to be established, n 120

Syracuse, N. Y.: Pacuse, N. Y.:

-New York State Rys.:

Regulation of motor vehicle traffic
[Brown], *876

Unit for track maintenance costs
[Roundey], 500

-Syracuse & South Bay Elect. R.R.:
Reorganization plans, 333, n 950

Tacoma, Wash.:

—Puget Sound Elect. Ry.:

Prevention of collisions with vehicles [Winsor], *874

—Tacoma Ry. & Pr. Co.:

Co-operation of railways with motor vehicle owners in safety work [Ryowne] *348 Co-operation of railways with motor vehicle owners in safety work [Browne], *348
Franchise case, 904, n 945, n 1035
One-man cars placed in operation, n 208
Safety-first training of school children [Henry], *437; Comment, 428
Taxes. (See Financial)
Technical journals' service valuable [Cooper], 1011
Technical schools about Technical journals' service valuable [Cooper],
1011
Technical schools should co-operate with railways, Comment, 170
Terminal stations and terminals:

—Chicago, III., Proposed union station for Illinois Central Ry., *537
—Dallas, Tex., Interurban terminal building
[Moore], *525; Comment, 522; Correction, 713
—Newark, N. J.. Rerouting of traffic
[Donecker], *173; Comment, 169
—Springfield Street Rys. plan for handling
exposition crowds, *1348
Terre Haute, Ind.:
—Terre Haute, Indianapolis & Eastern Tr.
Co. (Terre Haute Div.):
Block signals being installed, n 158
(See also Indianapolis, Ind.)
Tests of equipment:
—Acceleration and braking tests in Chicago
Loop district, *271
—Axle testing methods, Anderson, Ind [Ilemming], *1025
—Bond testing, Brooklyn, N. Y., *1094
—Boston, Mass., Train derailing test, *1202
—Table testing instrument for locating
grounds (Matthews & Bro.), *1213
—Insulator testing methods [Ewing], 1209
—Rules for insulation tests on d.c. feeders,
*286
—Starting resistance offered by cars [Ewing],
*974
—Transformer for testing field coils in Atlantic
City (N. J.) shops [Faber], *364

---Starting resistance offered by cars [Ewing],
*974
---Transformer for testing field coils in Atlantic
City (N. I.) shops [Faber], *364
---Transformer-oil moisture test, 1030
---Two-car train, Test in comparison to single
car, *586

Texas Electric Ry. (See Dallas, Tex.)
Texas Traction Co. (See Dallas, Tex.)
Third Avenue Ry. (See New York City)
Third rail contact system:
---Bonds (see Rail joints and bonds)
---Circuit breaker installation for N. Y. Municipal Ry., *1357
---N. Y. City, I. R. T. Co., 150-lb. third rail
for new subways, *543
---Sleet cutter and third-rail shoe combined,
Atlantic City, N. J. [Blaiklock], *729
---Terminal for connecting feeders to third-rail
(Standard underground), *1213
---Types of third-rail construction, *824
----Employee's ticket of new design used in

Timber preservation:
—Pole treatment specifications, 400
—Preservatives and treatment specifications, 831

Reservative and treatment specifications, 400 831
—Pressure type wood preserving plant, Boston,
Mass. [Bright], *1065
—Use of treated timber by railways [Teesdale], 1254
Titusville, Pa.:
—Titusville Traction Co.:
Six-cent fare allowed, n 1178
Toilets on interurban lines opposed by Pennsylvania railways, 1129
Toledo, O.:
—Community traction plan and financial con-

vania railways, 1129
ledo, O.:

--Community traction plan and financial controversy, n 157, n 202, n 245, n 902, n 990, 1124, 1172, 1218

--Newspaper fined for interference with court's 3-cent fare injunction, n 1315

--Northwestern Ohio Ry, & Pr. Co.:
Signs to reduce rowdyism, *25

--Toledo Rys, & Lt. Co.:
Control for two-car units (Westinghouse), *738

Court allows expenditure for new cars, n 331

Improvement of public relations
[Coates], 1154

Sliding scale of fares suggested, n 1218

Two-car unit operation, 723

Toledo, O.: -Toledo & Western R.R.:

-Toledo & Western R.R.:

-Freight and passenger traffic and operating features [Swartz], *1055

-Track conditions on Doherty properties [Swartz], 717

Topeka, Kan.:

—Ithey ordinance stringent, n 81

—Topeka Ry.:

Cars rebuilt for one-man operation,
*1028 Paving foundation made of old sand-stone blocks, *941

Paving foundation made of old sandstone blocks, *941

Toronto, Can.:

—Brazilian Tr., Lt. & Pr. Co.:

Annual report, 510

—Ontario hydro-radial railways' plea for government assistance, n 1173

—Toronto & York Radial Ry.:

Deviation case won by railway, n 989

Tower wagons (see Service and tower wagons)

Track construction:

—Ballast, keport of committee on way matters, 831

—Ballasting conditions, Doherty properties [Swartz], 718

—Baltimore, Md., Beautifying tracks, *142

—Concreting track in Fort Smith, Ark., *111

—Gasoline road-roller operating costs in Brooklyn, N. Y. [Cram], 1163

—Kansas City, Mo., Methods and costs, *430

—Leveling track with prepared wedges (Steele-Alderfer), *505

—Milwaukce, Wis., standards, *198

—Power tools supplanting labor, Comment, 429

—Rail corrugation, Effect of flexibility of roadbed. Comment, 1004

Milwaukee, Wis., standards, *198
Power tools supplanting labor, Comment, 429
Rail corrugation, Effect of flexibility of roadbed, Comment, 1004
Standard lavouts of Brooklyn (N. Y.)
Rapid Transit Co. [Bernard], *148
Steel tie construction in shallow roadbed (International), *543
Tic tamping in Kansas (ity, Mo. (Ingersoll-Rand), *1167
Tie tamping practice and economy of pneumatic machines [Hicks], *533
Tilted rail construction to obtain full line contact (International), *1029
Washington, D. C., Improved yoke for slot construction [Kimball], *501
(See also Rails; Special-work)
Track maintenance:
Ballast screening machine on Kansas City Rys., *1168
Boston Elevated Ry., Girder rails replaced by T-rails, *942
Corrosion causes rail renewal in Cleveland, O., *545
Corrugation (see Rails)
Frogs made of track-scrap in Rochester, N. Y. [Benham], *407
Handling material in storage yards [Cram], *1284; Comment, 1281
Kansas City, Mo., Methods and costs, *430
Oxy-acetylene cutting practice in San Francisco. Cal. [Legare]. *108
Philadelphia subway, Record of unballasted track [Twining], *481
Pneumatic tamping outfits useful in different ways [Brennan], *1118
Power tools supplanting labor, Comment, 429
Rail grinder made of scrapped materials, Benton Harbor, Mich., *545
Sail grinding practice of Ray State Street

-Rail grinder made of scrapped materials,
Benton Harbor, Mich.. *545

-Rail grinding practice of Bay State Street
Ry. (Seymour), 30

-Rail grinding practice on Boston Elevated
Ry. (Stow), *542

-Single truck cars increase wear on track
[Swartz], 718

-Steam shovel for track rehabilitation,
Youngstown, O. (Keystone), *195

-Tie tamping practice and economy of pneumatic machines [Hicks], *533

-Unit for comparing costs:

Tie tamping practice and economy of pneumatic machines [Hicks], *533

Unit for comparing costs:

Best unit dependent upon its application [Kees], 682

Classifications involved [Roundey], 500
Comment, 257, 301

Controlling factors [Falconer], *499;
 [Mitchell], 403

Difficulties in deriving unit [Cram], 363, [West], 500; [Cooper], 530
Suggested classification [Berry], 403

Traffic investigations:

Boston Elevated Ry., *673

Checking traffic for establishing schedules, Connecticut Co. [Camp], 66

Chicago Loop district, *183, *218, *271

Length of single-fare rides in American cities [McGrath], *233; Comment, 214

Newark, N. J. [Donecker], *173; Comment, 169

Seattle, Wash., Traffic check on street travel, 420

Traffic peaks expensive, comment, 1089

Traffic stimulation:

Advertising attractively, Illinois Traction System, *715

-Advertising attractively, Illinois Traction System, *715

—Advertising campaign of Chicago Elevated
Rys., *359
—Bathing beach increases travel in Portland,
Ore., n 1178
—Binghamton, N. Y., Improving service to
stimulate traffic. *709

Traffic stimulation: (Continued)

Traffic stimulation: (Continued)

— Campaign for increased business in Sedalia, Mo., *140; Comment, 129

— Carload freight development on Illinois Traction System, *49; Comment, 46, 129

— London, England, advertising posters, *400

— Rochester, N. Y. [Arnold], *1238; Comment, 1231

— Selling points to be considered in planning campaigns, Comment, 171

Train resistance (see Energy consumption)

Train operating practice:

— Operation of cars and fundamentals in energy saving [Arthur], 397; Comment, 385

Transfers:

ergy saving [Arthur], 397; Comment, 385

Transfers:

Boston Elevated Ry., Proposed changes in privileges, *674

Design used for special crowds in Louisville, Ky., *274

Front-end collectors, special form, Kansas City, Mo., *57

Joplyn, Mo., Universal transfer plan abandoned, 746

Printing methods of Brooklyn (N. Y.) Rapid Transit Co., *216

Protection from abuse of privileges, 843

Publication of transfer regulations is required by court, Buffalo, N. Y., n 996

Transfer-issuing machines, *627

Transmission lines:

Illinois Commission issues rules for electrical construction, n 1342

Inclosed mounting for combination fuse and switch (Anderson-Ellcon), *732

Insulator problems, Comment, 1188

Insulators, Field testing methods [Ewing], 1209

Metering equipment for high tension out-

— Insulators, Field testing methods [Ewing], 1209

— Metering equipment for high tension outdoor operation (Westinghouse), *900

— Steel conductors, Electrical and mechanical characteristics, 898

— Transformers used for sectionalizing purposes, ('omment, 1090

Traveling experts, Plan to improve service by holding-company's specialists, *491; Comment, 476

Trenton, N. J.:

— New Jersey & Pennsylvania Tr. Co.:

Fare increase allowed on suburban line, 911

Wage increase, n 291

— Trenton & Mercer County Tr. Corp'n.:

Discharge of conductors sustained by arbitration board, n 34, n 156

Fare case, n 80, n 1131

Wage agreement, 156

Trolley wire. (See Overhead contact system)

Trolley wire. (See Overhead contact system)

Trolley noles and wheels. (See Current collecting devices)

Trucks, car:

Trucks, car:

—C. M. & St. P. locomotive trucks, *888

—Effect of single truck on economical size of car body, 589

—General discussion on modern practice in truck design, *628

—Improvements for old-style trucks, Akron, O., *986

—Improvements in standard truck construction (Brill), *736

—One-man car type, Illinois Traction System, 864

—Pull-in truck in use in Fort Smith, Ark.

—Pull-in truck in use in Fort Smith, Ark. [Wright], *148
Turbo-generators and equipment:
—Large installation for Virginia Ry. & Pr. Co., *1308
Twin City Rapid Transit Co. (see Minneapolis, Minn) Twin City Rap Minn.)

Union Ry. (see New York City)
Union Street Ry. (see New Bedford, Mass.)
Union Traction Co. of Indiana (see Anderson, Ind.)
United Gas & Elect. Corp'n. (see New York City)
United Lt. & kys. Co. (see Grand Rapids, Mich.)
United Railroads of San Francisco (see San Francisco, Cal.)
United Rys. & Elect. Co. (see Baltimore, Md.)
United Rys. of St. Louis (see St. Louis, Mo.)
United Traction Co. (see Albany, N. Y.)
Utica, N. Y.:

—New York State Rys.;
Light weight automobile tower wagon
[Throop], *364

Valley Rys. (see Lemoyne, Pa.)
Valuation (see Appraisal of railway property)
Vancouver, Can.:

—British Columbia Elect. Ry.:
Children's fares changed, 469
Enlistment of employees in European
war, n 227
Express pick-up and delivery system inaugurated, n 1081
Front-end fare collectors, n 1040
Liability in runaway freight car case, n
537

Vancouver, Can.:

Vancouver, Can.:

—British Columbia Elect. Ry.: (Continued)

Open-air, rooffess car for summer
travel, *401

Traffic increases shown, n 208

Ventilation of cars:

—General discussion on modern practice, 606

Virginia Public Utilities Ass'n:

—Field of the one-man car [Ervin], *144

Virginia Ry. & Pr. Co. (see Richmond, Va.)

W

Wage arbitration (see Strikes and arbitrations)
Wages (see Employces)
Waiting stations:

—Boston Elevated Ry., Improvements to relieve congestion, *258
—Safety-switch for panel boards for station lighting system (Krantz), *324
Warsaw, Ind:

—Winona Interurban Ry.:
Receiver appointed, n 206
Wahington (State):

—Public Service Commission:
Order requiring Puget Sound Lt. & Pr.
Co. to heat certain cars, n 123
Railway losses shown by annual report, n 160
—Railway values depreciate because of automobile competition, n 511
Washington, Baltimore & Annapolis Elect. R.R.
(see Baltimore, Md.)
Washington, D. C:
—Capital Traction Co.:
Car-loading standards, Discussed before commission, n 82
Valuation figures adjusted, 1316
—Commission issues service standards, 419, 951
—Operating statistics of railways of District of Columbia, 466

951

Operating statistics of railways of District of Columbia, 466

Railway guide of attractive design (Matthews Northrup), *530

Washington Ry. & Elect. Co.:
Acetylene, Uses in car shop [Haar], *939

Annual report, 204
Car-loading standards, Discussed before commission, n 82

Washington, D. C.:

-Washington Ry. & Elect. Co.: (Continued)

Heavy yokes for conduit (slot construction) railways [Kimball], *501

Remodeling of private car, *1029

tion) railways [Kimball], *\$01
Remodeling of private car, *1029
Waterloo, Ia.:

—Waterloo, Cedar Falls & Northern Ry.:
One-man cars, Their design and operation [Cass], 1194
Sale of energy to municipalitics along interurban lines, *922
Special train for demonstrating farm tractors, *493
Welding, Special methods:
—Acetylene welding practice in Washington,
D. C. [Haar], *939
—Constant-current arc system (Elect. Welding Co.), *1307
—Cutting with oxy-acetylene flame in San Francisco, Cal., *108
—High-speed steel tips welded to machine tools, *1069
—Manganese steel welding ["Way Engineer"], *27
—Slag-coate1 electrodes and polarity reversal

— Manganese steet weiding [Way Engineer],

"27

— Slag-coate1 electrodes and polarity reversal
in electric welding, 1028

— Track joint arc-welding practice in WilkesBarre, Pa, [Hoffman], 1244

Welfare work (see Employees)

Westchester Elect. R.R. (see Mount Vernon,
N. Y.)

Western Ohio Ry. (see Lima, O.)

Western Red Cedar Ass'n:

— Specifications for treatment of poles, 400

Westinghouse Elect. & Mfg. Co., Proposed new
plant, n 1278

Wheaton, Ill.:

— Aurora, Elgin & Chicago R.R.:

Annual report, 1266

Wheelguards. (See Fenders and wheelguards)

Wheels:

Wheels:

Cast-steel wheel with manganese tread and flange (American Steel Foundries),

*69; Correction, 103

Contours should obtain line contact with rail, Comment, 385

Flange contour changed to reduce noise, Kansas (ity Rys., *240

Machining of ["Vulcan"], *108

Modern practice, *633

Report of committee on equipment, 833

Wheels:

Y

Yards (see Carhouses and storage yards)
Yonkers, N. Y.:

—Yonkers R.R.:

Experience ordinance unconstitutional,
n 1216
Strike, 199, *229, *484, 546, n 740;
Comment, 169, 299
Wage increase, n 75
Youngstown, O.:

—Mahoning & Shenango Ry. & Lt. Co.:
Light and power accounting in relation
to railway work [Dedrick], 1300;
Comment, 1281
Steam shovel for track reconstruction
(Keystone), *195
Track joint welding practice (Goldschmidt), *239

AUTHOR INDEX

"Accountant." Uniformity in accounting class-ifications, 979
"A Friend." Suggested name for one-man cars, 539

Arnold, B. J. Report on Bay State Street Ry., *13
—Fundamentals of traffic routing as applied in Rochester, N. Y., *1238
Arthur, William. Fundamentals of energy saving in car operation, 397
—Influencing factors in choice of single phase by Swiss Federal Rys., 319

B

B
Bancroft, William A. Psychology and economical habits, 1289
Batchelder, A. F. Mechanical design of electric locomotives, 977
Beck, C. H. Operation of one-man cars in Fort Worth, Tex., 1195
Beeler, John A. Corporations as employers, 539
Bellinger, J. B. Electric railways in military service, *18
Benham, C., Jr. Frogs made of track-scrap in Rochester, N. Y., *407
—Recording second-hand special work, *27
Bennett, H. K. Fair play between claim agents and public, 147
Benton, John E. Commission valuation for rate making, *782
Bernard, M. Standard track layouts of Brooklyn (N. Y.) Papid Transit Co., *148
Berry, E. H. Unit for track maintenance costs, 403
Betts, Philander, Classification of inventories

Bernard, M. Standard track layouts of Brooklyn (N. Y.) Papid Transit Co., *148
Berry, E. H. Unit for track maintenance costs, 403
Betts, Philander. Classification of inventories essential, 1052
Blaiklock, J. B. Combination slect cutter and third rail sloe, *729
Blanchard, A. Reduction of hot boxes on Boston & Worcester Street Ry., *1212
—Use of bronze inserts for armature bearings, Boston, Mass., *1305
Bleckwedel, George H. Coasting recorder maintenance on Long Island R. R., *983
—Compressor circuits protected by potential relays on Long Island R. R. cars, *454
Boardman, A. J. Interurban railway outlook, *725
Bowman, E. W. Co-operation in fire insurance matters, 1292
Boyce, W. H. System of car maintenance records, New Brighton, Pa., *479
Boynton, B. F. Fundamentals of claim work, 309
Brackett, O. A. Condenser type car lighting arresters

Brackett, O. A. Condenser type car lighting arresters, 731

Braden, James H. Getting out a company publication, Akron, O., *791
Bradley, L. C. Training of men for executive positions, *768
Branson, Harry. Circulating water pump attachment for air compressor, Allentown, Pa., *542

—Punch-mark system of keeping car-shop reports, *454
Brennan, Charles. Different uses for pneumatic tamping outfits, Albany, N. Y., *1118
Bright, Edgar W. Pressure type wood preserving

matic tamping outhts, Albany, N. Y.,
**1118

Bright, Edgar W. Pressure type wood preserving
plant, Boston, Mass., *1005

Brown, A. D. Regulation of motor vehicle
traffic, *876

Brown, James W. Babbitting jig for axle bearings, Hazleton, Pa., *1116

—Installation of headlights on car roofs,
Hazleton, Pa., *501

—Renewal of converter collector rings, 30

Browne, J. W. Co-operation of railways with
owners of motor vehicles in safety
work, Tacoma, Wash., *348

Bruenauer, O. Ball bearing journal boxes
(Gurney), *541
Buck, A. M. "Local conditions fallacy" in car
design, 727

Bulkeley, W. V. C. Storeroom methods used by
Columbus (O.) Ry., Pr. & Lt. Co., *101

Carlier, Joseph. Review of typical a.c. and d.c. installations in United States, 1155
Carraway, Leake. Editing and distribution of company publications, Charlotte, N. C., *792

company publications, Charlotte, N. C.,

*792

—Newspapers as a publicity medium, 936
Carson, George. Fair play between claim agents and public, 105
Carver, Harry E. Continuous inventory simplifications, 818

—Uses and preparation of continuous inventories, *1053
Cass, C. D. Design and operation of the oneman car, 1194
Chamberlain, William F. Group insurance for railway employees, 1291
Clapp, Harold W. Safety work on electric railways, 1110
Clardy, W. J. Desirability of standard weights for electric cars, 283
Clarke, J. L. Lamp maintenance on Los Angeles Ry. *107
Clinch, Beatrice V. Safety campaigns in Philadelphia, Pa., 1292
Coates, F. R. Improvement of public relations, 1154

Coe, Harry W. Substation maintenance costs and keeping of records on Illinois Traction System, *352
Coen, F. W. Taxation and regulation problems, 1109

Coffin, Harry B. Work of Portland (Ore.)
Safety Commission, 308
"Conduit." Fireproofing of cables in manholes,
*1305

"Conduit," Fireproofing of cables in manholes,

1305
onway, Thomas, Jr. Current tendencies in the
railway business, 10
Employees' co-operative plan in Philadelphia,
Pa., *968
Cook, E. J. Front-entrance center-exit car,
Rochester, N. Y., *1234
Cooper, H. S. Appreciation of convention issue
of Electric Railway Journal, 895
—Cost of service is proper basis for rate
making, 1060
—Data sheet for investigating causes of rail
corrugation, 727
—Practical unit for comparing track maintenance costs not obtainable, 539
—Service of technical journals, 1011
Cram, R. C. Gasoline road-roller operating
costs, *1163
—Grouting tool for surfacing pavements,
*1065

Material storage yard and labor saving

erial storage yard and labor saving equipments, Practice of Brooklyn (N.V.) Rapid Transit Co. and other railways, *1284 Material.

-Pitch-pouring cone for facilitating paving work, Brooklyn, N. Y., *1255 -Units for comparing track maintenance costs difficult to obtain, 363

D

Dedrick, A. E. Light and power accounting, 1300
Dempsey, J. J. Causes of increased cost of railway operation, 15
Dillon, S. E. Psychological puzzle of the jitney bus, 147
Donecker, H. C. Development of schedule engineers, *795
—Rerouting of traffic at Newark, N. J., *173
Doolittle, F. W. Developments in interurban railway conditions, 392, 937
Dunn, Homer A. Accounting inconsistencies and fallacies, *775

E

Ebeling, H. C. Dipping equipment for painting car fenders, Cleveland, O., *321

—Portable controller for shop use, Cleveland, O., *685 O., *685
—Street-flushing car used in Cleveland, O., *64

(Abbreviations: * Illustrated. n Short news item.)

Elgec, E. W. Oil cup lubrication for old-type motor, *1307

Elmendorf, R. 11. Good-will fostered by courteous treatment of public, 1301

Ernst, W. A. Repair of an armature spider, with loose laminations, *1026

Ervin, J. B. The field of the one-man car, *144 Ewing, D. D. Forces necessary to start different types of cars, *974

Methods of testing insulators in service, 1209

Faber, George F. Transformer for testing field coils in Atlantic City (N. J.) shops, coils in Atlantic City (N. J.) shops,
**364
Falconer, D. P. Controlling factors in track
maintenance costs, **499
—Riveted and welded construction of track
joints, Rochester, N. Y., *'982
Falknor, A. J. Regulation of motor vehicle
traffic in Seattle, Wash., 349
Febrey, Il. Il. New type of third rail bond for
new lines in Brooslyn, N. Y., *282
Fehr, H. R. All-steel, center-entrance cars,
Allentown, Pa., **896
Ford, Frank R. Valuable addition public relations code, 448
Forse, W. H., Jr. "Accounting inconsistencies
and fallacies," an exaggeration, 937
—Sinking fund accounting, 528
Foster, S. L. Motor-driven cable-reeling machine, San Francisco, Cal., *192
—Reinforcement of tubular steel poles in San
Francisco, Cal., *109

Gaboury, A. Evolution of the P. A. Y. E. car in Montreal, Can., *1163 Graham, J. N. Button end axles reduce wear, 278 Green, R. C. Ohio's compensation act, *868

Haar, G. E. Uses of acetylene in Washington (D. C.) car shops, *939
Bert. Welfare association activities in Milwaukee, Wis., *441; Loan funds, Hall, Bert. Welfare association activities in Milwaukee, Wis., *441; Loan funds, 726

Hamilton, F. M. Appraisal of property damaged in accidents in Seattle, Wash., 350

Handlon, J. H. Photography as an aid to trial attorneys, 310

Harding, M. E. Reinforcement of splices in catenary construction, *684

Hare, Samuel B. Advantages of the near-side stop, *873

Harte, Charles Rufus. Use of power-driven devices desirable in maintenance work, 278

Hemming, R. N. Enamelling vs. painting of cars, 1208

—Testing of axles, Anderson, Ind., *1025, n 1114

—Headlight practice and tests, *1354

Henry, Charles L. Attendance at the Toledo meeting of the C. E. R. A., 1254; Comment, 1139

—Industry benefited by public relations work, 539

—Review of railway conditions and activities Review of railway conditions and activities of A. E., R. A., *756

Henry, T. N. Safety-first training of school children in Tacoma, Wash., *437

Heulings, W. H., Jr. Standardization in car design, 1371

Hewes, James E. Use of electric traction in time of war, 22

Hicks, H. L. Tie tamping practice and economy of pneumatic machines, *533

Hild, F. W. Use and value of company publications, *787

Hill, W. V. Jitney situation in California, 1024 Hill, W. V. Jitney situation in California, 1024
Hodge, W. H. Interest in selling securities to patrons is spreading, 403
Hoffman, E. A. Arc-welding of track joints, Wilkes-Barre, Pa., 1244
Hovey, Albert F. Fireproofing of cables in manholes, 1068

"Inspector of car equipment." Practical car design details often overlooked, 238
Insull, Samuel. Economies effected by interconnection of power supply systems, 1160

Jack, A. G. Precautions against accidents, 1294
Johnson, A. R. Babbitting practice in Third
Avenue Ry. shops, New York City, *237
Johnson, Frederick W. Safeguarding drawbridges for electric railway operation,
1339 Jones, Edwin F. Future status of the electric railway, 1157
Jones, T. Norman, Jr. Effect of resilience of foundation on rail corrugation, *67
Jones, W. E. Work of the railway company's statistician, *777

K

Kascmeier, E. L. Clearing house plan for interline traffic accounts, 1250
Kealy, Philip J. Overhead charges in valua tion work, *762
Keen, C. G. Unit for comparing track maintenance costs, 682
Kennedy, II. J. First multiple-unit electric locomotives, 1114
—Reminiscences of B. & O. electrification, 26
Kent, James D. Self-propelled tower wagon practice in New York City, *90; Comment, 89
—Trolley wire performance, Union Ry., New York City, *540
Kimbal, C. S. Improved yokes for slot track construction in Washington, D. C., *501
King, Clyde L. Relation of national issues to local franchises, *797
Koppel, J. G. Method of drying out motorgenerator sets, *67
Kuhn, George W. Method of appraising public utility property, *97, *315

Lambert, Myles B. Motor-size standardization, 751

Lambert, Myles B. Motor-size standardization, 751
Leach, A. B. Financial development of electric railways, 813
Lee, A. M. Steam railroad claim work, 309
Lee, Ivy L. Frankness and honesty in publicity work, 809
Legare, B. P. Oxy-acctylene cutting practice in San Francisco, Cal., *108
Le Grand, Nic. Name for the one-man car, 1114
—-Repair-part-stock discussion, 1135
Leisenring, John. Substation maintenance costs and keeping of records on Illinois Traction System, *352
Lemon, Dr. Charles H. Medical examination of employees, Milwaukee, Wis., 494
Lewis, E. L. Appreciation of convention issue of Electric Railway Journal, 895
Lindall, John. Activities of American Electric Railway Engineering Ass'n, *822.
Lippincott, J. B. Determination of reasonable service rates under municipal ownership, 1010
Livers, John L. Name suggested for one-man cars, *726
Loebenstein, Julian. Depreciation and reserve fund calculations, *1057
Longergan, F. J. Relation of claim department to public, 310.

M

McCahill, David I. Legal status of the jitney, 1248

McCloskey, F. W. Motor design changes necessitated by closer gear centers, *408

McGrath, D. J. Investigation of length of single-fare rides in American cities, *223

—Relation of investment to traffic density, *58

McIlraith, E. J. Bonding experience in Seattle, Wash, *938

McKelway, G. H. Gage for cutting test pieces of rubber in cable testing, *983

—Protection of rail bonds from theft, Brooklyn, N. Y., *1165

—Trolley suspension bracket arms of unusual length, *684

—Trolley trough switch for Brooklyn (N. Y.)

Bridge, *237

—Trolley wire maintenance inspection, 1026

Mackall, K. W. Theory of illumination in headlight construction, *1151

Maize, F. P. Fan ventilation of old-type motors in Portland, Ore., *284

Miller, F. A. System of keeping maintenance costs in Oakland, (al., *312

Mills, J. S. Electric tractor for handling rolling stock in yards and shops, *1209

—Method of reclaiming button-end axles in Long Island RR. shops, *193

Mitchell, L. A. Track maintenance unit for comparing costs, 403

Moore, Edward T. Dallas, Tex., interurban terminal building, *525; Correction, 713

Mullett, H. A. Sealed fuse cabinet on cars, *29

N

Newton, E. G. Theory and application of light-ning protection, 1246 Nicholl, H. A. Activit'es of Transportation & Traffic Association, *837

"Observer." Encouragement in Bay State Street Ry. fare case decision, 683

Parsons, R. H. Installation and maintenance of car lightning arresters, *502

— Water heating attachment on babbitting furnace, *406

Payne, George Henry. Publicity and the ills of street railways, 1290

Phillips, F. R. Improvements in work of the Engineering Association, 1115

Phillips, Victor B. Steam flow meters: Application to reciprocating engines in Cleveland, O., *728

Potter, Sylvester. Method of unloading new cars in Detroit, Mich., *236

O

Quercau, C. 11. Mechanical design of electric locomotives, 1203

Ransom, E. D. Lamp and fuse test board for storerooms, *455
—Method of labeling fuses, *897
Reynolds, John J. Advantages of the near-side stop, *872
Rice, Cecil G. Claim work fundamentals, *878
Roundey, E. P. Unit for track maintenance costs, 500
Rumney, Nathan. Freight and express traffic on electric railways, 1150

Shaw, Carroll H. Rebuilt cars for rush-hour service in Sheboygan, Wis, *194
Shonts, Theodore P. Relations between public service corporations and employees, 1237
Smith, R. J. Electric-welded joint practice in Davenport, Ia., *68
Spahr, Boyd Lee. Taxation of different forms in Pennsylvania, 1245
Sprague, Frank J. Engineering development of the electric railway, *771
Squier, C. W. Development of sheet-steel gear cases, *1166
Squires, I. H. Blasting pole holes in clay, *29
Steuart, William M. Growth of the electrical industries, *779
Stillwell, L. B. Development of the truss-side construction for steel cars, *1112, 1208
Strauss, J. B. Safety car-stopping device, *1210
Swartz, A. Characteristic features of Toledo (O.) & Western RR., *1055
—Track conditions on Doherty properties, 717 Т

Tanis, G. B. Current collecting carriage for supplying current to third-rail equipments in yards and shops, *939

—Fastening of feeder pipes to vertical columns, Brooklyn, N. Y., *1257
—Safety devices for switchboards, *283
Taurman, A. Operation of crossing protective device of Virginia Ry. & Pr. Co. with block signals, 1161
Thayer, G. R., Lamp for tunnel inspection work, *1117
Thompson, Walter S., Railway, publicity, 1346 Thompson, Walter S. Railway publicity, 1346
Throop, H. G. Light weight automobile tower
wagon, Utica, N. Y., *364
Twining, William S. Philadelphia subway track
maintenance record, *481
Twyford, H. B. Standard specifications in purchase of railway supplies, *973
Tynan, Leonard J. New Jersey's compensation
law, 870

Van Brunt, John. Modern practice in mechanical boiler stoking, 1255
"Vulcan" Gear case maintenance experiences in England, 1116
——Machining of tires, *108
——Shop workmen should know relative cost of available material, 321

Wakelee, Edmund W. Public relations improved by proper attitude of company, 1095
Walch, E. P. Claim work principles, *877
"Way Engineer." Welding manganese steel, Walch, E. P. Claim work principles, '87'
"Way Engineer." Welding manganese steel,

27

Wells, Charles B. Supreme Court unbolds fare
granted to Denver & South Platte Ry.,

96

Werth, W. F. M. Home-made electric water
heater, *364

West, Edward A. Unit for comparing track
maintenance costs, 500

Weston, George. Fundamentals of industrial
democracy, 1205

Wheelwright, G. S. Company publications of
Virginia Ry. & Pr. (o., *789)

White, J. G. Efficiency in military and industrial preparedness, c 106

Whitmore, George. Claim department of Illinois Traction System, 1159

Whittaker, C. C. Regenerative d.c. locomotives
of Lake Erie & Northern Ry., *730

Wilcoxon, K. L. Rigid car inspection methods,
Michigan City, Ind., *1305

Wildman, John R. Accounting and modern industry, *793

Williams, Timothy S. Prediction of future
transit developments, n 1032

Wilson, H. L. Co-operation in remedying accounting faults, 1024

Winsor, H. G. Prevention of collisions with
vehicles, *874

Wright, E. Pull-in truck in use in Fort Smith,
Ark., *148

Wurzbach, H. E. Ventilation of railway motors
for summer service, Ogden, Utah, *238

(Abbreviations: * Illustrated. n Short news item.)

PERSONAL

A

Acworth, W. M., 1224
Adams, James L., *1274
Ahearn, Thomas, 997
Alexander, George, 1132
Alexander, Roy, 209
Alexander, Walter, 421
Allen, Horace E., 470
Allen, J. Walter, 1368
Anderson, Samuel, 252
Ashe, Peter, 1273
Asher, Ernest, 556
Armstrong, W. R., *252
Atkins, J. W., 421
Atkinson, John M., 1047
Avery, W. S., 1032

В

Bache, I.cigh Stanley, 748
Baker, A. W., 954
Bamberger, Simon, 470, 1132
Banker, Carleton, 1314
Barnes, James P., *41
Barnes, James P., *41
Barnes, John W., 1133
Barrington, Charles, Jr., 124
Basnier, J. A., 378
Belding, Walter, 1368
Bennett, Josiah Ouincy, 1224
Berry, C. F., 470
Billhardt, F. E., 1041
Billings, Rev D., 1320
Blaine, E. F., 337
Blinn, A. C., 1180
Bogue, Virgil Gay, 913
Bonfield, I. I., 40
Boylan, M. R., *847
Brackett, W. S., 40
Bradlev, Luke C., 848, 1180
Brassill, I. K., 209
Brendel, Wallace W., 295
Brewton, W. R., 299
Brown, A. B., 470
Brown, H. L., 858
Brown, Robert C., 1273
Brumbv, William V., 912
Budd, Britton I., 422
Bugbee, George L., 1082
Bullock, George, 997
Bullock, Harry A., 1273
Bulpin, Thomas, 124
Burdick, E. J., *82, 124

C

Callaghan, W. C., 251
Callery, James D., 1224
Carithers, James D., 1224
Carrithers, James Y., 1369
Carr, James C., 32.
Carroll, R. G., 124
Carter, C. R., 912
Chapman, George A., 251
Childers, W. R., 209
Choate, J. K., 1368
Christy, Will, 295, 337
Chur, Walter, 422
Clark, James S., 251
Clark, Roy, 556
Clay, John A., 748
Cobb, B. C., 1082, 1132
Coleman, E. P., 295
Collins, Joseph F., 1224, 1320
Connette, Edward G., *997
Connolly, William H., 1274
Conway, G. R. G., 912
Corey, H. H., 41
Corliss, Cyrus, 1368
Craven, Alfred, 912, 954
Crawford, Norman McD., 1082
Cunte, Charles, 1180

D

Daggett, George F., 124
Dailey, S. H., 1132
Davis, W. L., 124
De Neale, William N., 82
Denniston, James M., 470
Donald, J. C., *41
Downs, E. E., 1321
Drew, Charles A., 41
Drexler, N. E., 41

Driscoll, William A., 1132 Duffy, C. Nesbitt, 164 Duvall, J. B., 470

E

Emery, C. F., 1041 Emmons, C. D., 40 Empey, J. R., 556 Everett, Henry A., 1082

Fallon, B. J., 748
Feron, M. J., 748
Fillmore, W. J., 1224
Finigan, Thomas, *847
Fisher, Dan G., 470
Fitts, Clarke C., 136f
Franklin, C. F., 1224
Frazer, W. D., 1224
Frueauff, Harry D., 470, 700

G

Gagne, Edward H., 1133
Gannon, Frank A., *1321
Garrison, N. I., 1368
Garrett, Edward, 164
Gauthier, Joseph O., 997
Gillette, V. A., 40
Goldthwait, G. E., 1273
Gonzenbach, Ernest, 421
Gordon, L. O., 1041, 1132
Grady, James, 997
Gray, E. H., 41
Gray, L. D., 378
Green, Alston, 858
Green, D. C., 700, 1321
Green, Fred J., 1224
Greenland, Sam W., 700
Gribben, Ifarry H., 954
Griffin, James H., 1273
Guckel, Charles H., 1133
Guernsey, R. T., 421

Haas, Exum M., 858
Haley, George S., 1274
Hammett, Edward, 1082
Hammond, C. B., 748
Hammond, Frank, 516
Hardawy, Frank, 516
Hardawy, Frank, 516
Hardy, F. I., 40, *125
Harris, Norman Wait, 164
Harris, R. W., 1180
Harrison, Raymond H., 125
Hart, George H., 997
Harvey, John, 1224
Hathaway, E. C., 1273, *1321
Hawks, S. S., 164
Hawkins, E. E., 700
Hemans, Lawton T., 1131
Heener, William, 470
Henderson, C. A., 124
Henning, J. F., 748
Hill, Minot J., 470
Hincher, William Ward, 954
Hole, Charles B., 700
Hodson, Homer, 1320
Hodson, Homer, 1320
Holdar, L. E., 40
Hotchkiss, Charles Wilcox, 997

1nsull, Samuel, 422 Irelan, S. B., 516, 748

Jackson, Lawrence W., 470 Jeffries, G. K., 1132 Johnstone, Charles, 82 Jones, Joseph T., 1274 Jones, Richard, 164 Jones, T. Norman, Jr., 1273, *1369

Kealy, Philip J., 82, 421, 1273 Kelly, R. E., 1041 Kelly, T. G., 251 Kemp. J. T., 82 Kirschke, Max T., Sr., 209 Kuhrts, George, 124 Kurtz, Otto, 1082

Lamar, R. W., 378
Langdon, A. L., 748
Leary, J. H., 251
Leisenring, John, 1132
Lenhart, C. E., 556
Leslie, James A., 422, 701
Lockett, J. H., 1082
Lord, George Lakey, 378
Lord, Irving P., 700
Low, Fenwick E., 954
Lumsden, James, 748
Lynch, B. W., 912

M

McAllister, L., 337
McCann, W. R., 25
McClellan, William, 378
McDougall, R. E., 848
McGovern, William A., 209
McGrath, D. J., 954
McGraw, W. J., 164
McHenry, W. H., 1132
MacKeen, David, 1133
McKinley, William B., 1082
McMurray, E. T., 209
Macy, V. Everit, 912
Mange, John I., *251
Manning, H. S., 252
Marchant, R. B., 1320
Marler, H. O., 1041
Martin, B. L., 209
Merry, R. H., 1273
Miller, T. L., 470, 516
Miller, W. C., 378
Miser, W. B., 40
Moore, Edward T., 337
Morse, Edwin K., 1224
Munro, David A., 1132
Murphy, James H., 516
Murray, William S., 1273
Musgrove, C. F., 40

Neilson, Trevor C., 1224 Neville, W. P., 700 Newton, B. P., 1132 Nixon, D. T., 556

0

Osborn, J. W., 1224 Ostrander, Edward, 40

Palmer, L. H., 1041
Pascoc, W. F., 1274
Patterson, W. R., 208
Pease, Louis A., 470
Pedler, E. K., 295
Penick, J. M., 1368
Penney, Thomas, 748
Peoples, William, 378
Perrine, William, 378
Perrine, William F., 470
Phair, James, 1224
Phillips, J. G., 556
Phillips, John P., 470
Pierce, Ralph, 378
Porter, Calbert E., 1320
Potter, H. Bertram, *701
Pratt, Frederick S., 470
Pratt, Mason D., 912
Prill, Max, Sr., 337

Q

Quain, Redmond, 1082

R

Rankine, Richard F., 164
Reed, Frederic H., 1274
Reiss, J. P., 209
Relf, H. K., 378
Reynolds, S. W., 40
Rhodes, A. E., 700
Rice, John P., 556
Ristine, Irwin M., 40
Robinson, D. H., 912

*Denotes portrait

Rodger, W. S., 209 Rogers, S. C., 1320 Rolston, W. E., 1320 Ross, H. B., 516 Ross, I. W., 912 Rowray, J. B., 295 Rudd, Lafayette G., 1 Rust, Marshall, 1082 1273, 1321

Sadler, Wilbur Fisk, Jr., 1082
Sallec, John D., 41
Sarvis, Arthur H., 997
Savage, M. W., 125
Schauc, J. C., 1224
Schley, J. L., 954
Seeley, W. D., 125
Severson, S. B., 337
Shaw, James F., 1368
Small, Oren A., *1274
Smalley, William W., 1369
Smith, Edwin V., 164
Smith, George A., 421, 470
Smith, James M., 40
Smith, Isaymond H., 1041, 1321
Smollin, Charles F., 124
Snodgrass, C. O., 1082
Squire, C. N., 913
Stanley, Albert H., *1273, 1368
Stannard, C. N., 421
Stewart, Joseph, 1132
Storrs, L. S., *847
Stott, Henry G., 124
Strait, E. N., 470
Swain, J. G., 1273
Swoboda, H. O., 858

T

Taylor, John T., 164
Thomas, Charles E., 556
Thomas, E. C., 1041
Thompson, Millard F., 1224
Thrasher, Charles S., 556
Tipton, J. W., 124
Tone, S. L., 1274
Townsend, Alfred F., 421
Treat, Dean, 858
Trimingham, J. H., 82

Underwood, E. W., 556

Vaughan, John F., 421 Voth, W. B., 421, *700 Vreeland, H. H., 209

Walker, James Blaine, 1273
Walmsley, Walter N., 40
Walters, H. C., 556, 700
Warnock, Fred J., 1320
Weeks, George K., 556
Weigel, John, 41
Wells, Joseph S., 1041
Werber, C. A., 295
Werth, F. M., 124
West, Joseph A., 209
Westermeyer, August, 1082
Whalen, Bernard, 164
Whitaker, James H., 1133
White, George, 1274
White, George, 1274
White, H. B., 1273
White, Pope Y., 912
Whitmore, G. R., 40
Wilcox, J. A., 556
Wilcoxon, Karl L., 1180
Willcox, William R., 41
Williams, John G., 1041
Wilson, G. H., 209
Woodland, W. Stanley, 470
Woodroofe, W. T., 913
Wray, James G., 858
Wuster, W. L., 748

7.

Zinsmeister, W. H., 1320