

INDEX

January, 1953 - December, 1953

Railway
**Signaling and
Communications**
NAME REGISTERED U.S. PATENT OFFICE

Vol. 46

JOHN H. DUNN
Editor

ROBERT W. MCKNIGHT
Associate Editor

MARTHA CLUVERIUS
Assistant Editor

JOHN S. VREELAND
Business Manager

Simmons-Boardman Publishing Corp.

Chicago New York Cleveland Washington San Francisco Los Angeles Seattle Dallas

1953

Transportation Library
TF
C15
A1
R15
v. 46

Quick Reference to Railroad Feature Articles

Table listing railroad feature articles with page numbers. Includes entries for Bangor & Aroostook, Boston & Maine, Canadian National, Chesapeake & Ohio, Chicago & North Western, etc.

General Index

A

Table listing index entries under 'A' such as American Ceramic Society, Application of compandors in communications circuits, Approach locking, etc.

B

Table listing index entries under 'B' such as Bangor & Aroostook, Better bonds and lamps, Better protection for motor cars, etc.

C

Table listing index entries under 'C' such as Canadian National, Electric interlocking, Mimco yard, Toronto, etc.

Table listing index entries for 'Issues' and 'Page Numbers' from January to December.

Table listing index entries for 'Carrier' and 'Centralized traffic control' with specific details for various railroads and systems.

Table listing index entries for 'Half gates and flashers', 'Chicago, Burlingtin & Quincy', 'Code control', etc.

D

Table listing index entries under 'D' such as Detector, broken wheels, Delaware, Lackawanna & Western, etc.

E

Table listing index entries under 'E' such as Electron tubes, Electronic retarder control, Electroplating plant, etc.

Emergency power:
 CTC Seaboard Air Line, 163 mi.,
 Atlanta-Birmingham 340
 Erie:
 Half-gates and flashers, 12 streets,
 Passaic, N.J. 487
 Train identification system, Sala-
 manca, N.Y. 54

F

False-proceed conditions:
 Bureau of Safety report, ICC ... 349
 False-proceed failures:
 Bureau of Safety report, ICC ... 432
 False-restrictive failures:
 Bureau of Safety report, ICC ... 348
 Fire extinguisher, automatic:
 RI interlocking, Chicago 564
 Flood detector:
 AT&SF, Griffith, Ariz. 887
 Footboard speakers, locomotives:
 Yard radio, CB&Q, Omaha-Coun-
 cil Bluffs 411
 Freight checking:
 LCL house, loudspeakers,
 AT&SF, Chicago 122

G

Gould-National Batteries, Inc. .212, 365
 Grand Trunk Western:
 CTC 37 mi. Durand, Mich.-Pon-
 tiac 44
 Graybar Electric Company 582
 Great Northern 838
 Radio 278
 Train and wayside radio, 100 mi.,
 Virginia, Minn.-Allouez 710

H

Half-carrier:
 NYC Albany, N.Y. 109
 Highball, last on New Castle &
 Frenchtown:
 Pan American Railway Congress 500
 Highway crossing protection:
 B&M, half-gates and flashers, 5
 streets, Worcester, Mass. 345
 CP Flashers and gates, Sudbury,
 Ont. 194
 C&NW half gates and flashers, 3
 streets, Crystal Lake, Ill. 412
 Erie, 12 streets, half-gates and
 flashers, Passaic, N.J. 487
 MKT, special controls 268
 TH&B Hamilton, Ont. 718
 Highway crossing protection 1952 . 37
 How to use transistors in dispatch-
 ers' telephone circuits 827

I

I am open minded on more or less
 regulation 796
 Illinois Central:
 Automatic block signals 170 mi.
 Ill.-Ky. 175
 Intercommunications systems 1952 43
 Interlocking, electric:
 CN, Mimco yard, Toronto 329
 NYC, Lyons, N.Y. 473
 Southern, Cincinnati, Ohio 105
 Interlocking, electro-pneumatic:
 DL&W Newark, N.J. 701
 JCL, classification yard, Allen-
 town, Pa. 630
 Interlocking, remote control:

LV, Sayre, Pa. 558
 MC, Detroit, Mich. 899
 Interlocking, route lever:
 Rock Island, Chicago 560
 Interlockings, automatic 1952 37
 Interlockings, electric:
 JCL, Franklin Jct., Pa. 404
 LV, Wilkes-Barre, Pa. 404
 Interlockings:
 New 1952 35
 Rebuilt 1952 36
 Interstate Commerce Commission
 Bureau of Safety report348, 432
 Intrafax speeds ticket sales 826

J

Jersey Central Lines:
 Electric interlocking, Franklin
 Jct., Pa. 404
 Retarder yd. Allentown, Pa. 627
 Johnson, E. F., Company 516

K

Kinks:
 Diagnosis and cure of "sul-
 phated" batteries 836
 Insulators for live terminals 359
 Motor Car turntable 196
 Relay testing attachment for code
 meters 643
 Transposing line wire 352

L

Lehigh Valley:
 Electric interlocking, Wilkes-
 Barre, Pa. 404
 Loudspeakers communication,
 LCL transfer, Manchester, N.Y. 256
 Remote control interlocking,
 Sayre, Pa. 558
 Lenkurt Electric Company 436
 Lightning damage can be reduced . 798
 Lightning screen:
 CTC 554
 Line wire breaks 906
 Loudspeaker communication:
 B&M, half-gates and flashers, 5
 streets, Worcester, Mass. 346
 Manchester, N.Y., LV, LCL
 transfer 256
 Loudspeaker systems:
 EJ&E yard, Gary, Ind. 885
 St. Louis-San Francisco's St.
 Louis yard 565
 UP, Council Bluffs, Iowa yard .. 416
 Loudspeakers, talk-back and pag-
 ing:
 LCL house, freight checking,
 AT&SF, Chicago 122
 Loudspeakers, yard:
 StL-SF, Car inspector's radio,
 Springfield, Mo. 192
 Louisville & Nashville:
 CTC 64 mi., Calera, Ala.-Mont-
 gomery 179
 Lunar marker:
 IC, ABS, 170 mi. Ill.-Ky. 175

M

Maher, D. V., & Co. 280
 Manual and automatic control:
 Chicago & North Western half-
 gates and flashers, 3 streets,
 Crystal Lake, Ill. 412

Manual automatic control:
 B&M, half-gates and flashers, 5
 streets, Worcester, Mass. 345
 McDougall-Butler Co., Inc. 280
 Mexican railways have modern com-
 munications 825
 Michigan Central:
 Remote control interlockings, De-
 troit, Mich. 897
 Microwave:
 AT&SF, 68 mi., Beaumont, Tex.-
 Galveston 48
 Microwave:
 CTC 90 mi., Venezuela, Orinoco
 Mining Company 479
 Missouri-Kansas-Texas:
 Special highway crossing protec-
 tion controls 268
 Telephone checking, freight
 house, St. Louis 333
 Monitor phones:
 St. Louis-San Francisco freight
 house, St. Louis 486
 Motor car indicator:
 UP CTC 555
 CTC SAL, 163 mi., Atlanta-Bir-
 mingham 341
 Motorola Communications & Elec-
 tronics Inc. 516
 Multiplex code:
 DL&W interlocking, Newark, N.J. 701

N

Need for employee training 824
 New Developments:
 (See also Products on Review)
 Blueprint holders 267
 Cable fault locator 570
 Capacitor, high-speed 268
 Capacitors, tantalum 128
 Capacitor VHF-UHF 268
 Carrier telegraph system 198
 Case for tester 641
 Conduit, moisture-proof 266
 Converter for communications .. 570
 Cordless switchboard 571
 Crossbar switch 641
 Decode resistance box 642
 Electric plant 266
 Electric plant, portable 198
 Electrical insulating tape 267
 Electronic paging system 640
 Enclosure for "S" relays 126
 Five pair telephone cable 352
 Flashlight battery 495
 Frame wire 352
 Hydraulic derrick 640
 Improved battery 351
 Insulating compound 126
 Line fault analyzer 351
 Magnetic impulse counter 126
 Microwave equipment 128
 Neoprene telephone wire 495
 Oilproof Neoprene tape 268
 Paints, exterior 268
 Polyester film 352
 Power augur 351
 Quartz crystals 351
 Quick disconnect coupling 641
 Radio packset 352
 Radio transmitter-receiver 570
 Railroad radio 266
 Railroad TV camera 495
 Snap-action waterproof switch .. 642
 Snow blower, switch 420
 Snow detector 128
 Solderless connector 639
 Submarine cable 571

- Telegraph rectifier 267
Terminal blocks 640
Terminal crimper, solderless ... 126
Terminals, heavy duty, solderless 267
Test meter 198
Tinning agent 639
TV camera 198
Variable impedance wattmeter .. 642
Wall-desk telephone 496
Water purifier 495
New York Central:
 Electric interlocking, Lyons, N.Y. 473
 Telegraph office, Albany, N.Y. .. 109
New York, Chicago & St. Louis:
 Wheeling & Lake Erie district, yard radio, Cleveland 270
Northern Pacific:
 Emergency use of radio 64
- O**
- Orinoco Mining Company:
 Microwave CTC, 90 mi., Venezuela 490
- P**
- Paging system:
 M-K-T, freight house, St. Louis 333
 St L-SF, freight house, St. Louis 486
 St L-SF, St. Louis yard 565
 UP, Council Bluffs, Iowa yard. . 416
 UP, mail transfer, Council Bluffs, Iowa 343
Pan American Railway Congress:
 Signal and communications papers 497
Pole line construction 1952 42
Printing telegraph:
 Signal transmission, wave form distortion problem 633
Products on Review:
 (See also New Developments)
 Armored cable 828
 Battery box 725
 Bonding machine 719
 Cab signal test unit 723
 Car checker radio 736
 Cathode-ray oscilloscope 720
 Communications battery 723
 Compandor 830
 Complete APB system without line wires 719
 Concrete houses 724
 D. C. microammeter 725
 Drilling machine 719
 Dual-channel, 24-hour sound-scriber 721
 Electronic commutation 742
 Electronic power supply for CTC 721
 Emergency lamp 916
 Engine-generator 730
 Fargo connector 725
 Fast fuses 726
 Fault locator 733
 Flasher relay 829
 Flashlight 916
 Foot switch 639
 Frequency-responsive speed governor 728
 High speed teleprinter 830
 Industrial flashlights 918
 Inside telephone cable 829
 Inverters 732
 Lamp-control relays 829
 Lifetime loudspeaker 725
 Lightning arrester 726
 Mercury batteries 725
 Micro-power 918
 Microwave 732
 Miniature resistors 734
 Motor car generator 730
 Motor generators for train control 722
 Multi-frequency ringers 738
 Multiplex 730
 New 8-way anchor 736
 New paints 725
 New rectifier 720
 Noiseless microphone 733
 Oscillator controls 916
 Packset harness 744
 Portable indicating instruments.. 720
 Power amplifiers 738
 Q meter 726
 Railroad television 721
 Roller transportation bracket ... 740
 Rollfiles for map storage 918
 RX meter 725
 Selenium rectifier power units .. 724
 Self-bonding tape 723
 Side band filters 828
 Silicon alloy junction diode 642
 64-volt power 722
 Stabilized crystal 829
 Telephone cable 728
 Test equipment 726
 Type VTB relays 742
 Vacuum-tube voltmeter 721
 Variable oscillator 730
 Waystation subset 829
 Put transportation abreast of the times 795
- R**
- Radio:
 Flashes flood warnings, AT&SF.. 887
 Road train 1952 40
 Yard 1952 41
 Radio, remote control by dispatcher:
 SP train-wayside Sacramento, Cal.-Sparks, Nev. 185
 Radio, road train and wayside:
 SP, 100 mi., Oregon 805
 Radio, road train and wayside:
 B&A system in Maine 492
 GN, Virginia, Minn.-Allouez, 100 mi. 710
 Milwaukee Road, 158 mi., S.D. . 480
 SP 155 mi., Sacramento, Cal.-Sparks, Nev. 185
 Radio, yard:
 StL-SF Springfield, Mo., Car inspector's loudspeakers 192
 Railroad radio:
 Pan American Railway Congress. 498
 Railway Telegraph & Telephone Appliance Association 748
 Retarder, automatic speed control:
 EJ&E yard, Gary, Ind. 881
 Retarder control, automatic electronic 569
 Retarder speed control:
 Explanation of basic principles .. 188
 Retarders:
 JCL, Allentown, Pa. 627
 Review of Communications 1952 .. 39
 Review of Signaling 1952 33
 Richmond, Fredericksburg & Potomac:
 Broken wheel detector, Alexandria, Va. 197
 Road train communication 1952 .. 40
 Rock slide detectors:
 CTC, SAL, 163 mi., Atlanta-Birmingham 341
 Route control:
 RI interlocking, Chicago 560
- S**
- St. Louis-San Francisco: 576, 838
 Car checking with walkie-talkies, St. Louis 350
 St. Louis yard communications,.. 565
 Telephone checking freight house, St. Louis 484
 Walkie-talkies, car inspectors, Springfield, Mo. 192
St. Louis-Southwestern 838
Seaboard Air Lines:
 CTC, 163 mi., Atlanta-Birmingham, 336
Siding-to-siding block:
 Canadian National CTC 148 mi., Ontario 251
 CTC, Seaboard Air Lines, Atlanta-Birmingham, 163 mi. 337
Signal Appliance Association:
 Elections 746, 908
Signal Section, AAR:
 Convention 795
 Convention program 908
 Elections 706
 Elections 746
Signaling exhibitors 746
Signaling review of 1952 33
Signal transmission in printing telegraph operation 633
Signals, starting:
 Clinchfield CTC, Erwin yard. . 400
Signals, train inspection:
 NYC, electric interlocking, Lyons, New York 476
Signal systems:
 Pan American Railway Congress. 497
Silvium cells prolong life of a storage battery 365
Simplex Wire & Cable Co. 142
Single-current printer circuits 633
Southern:
 Electric interlocking Cincinnati, Ohio 105
 Southern Pacific, 576, 838
 Train radio, 100 mi., Oregon 805
 Train-wayside radio 155 mi., Sacramento, Cal.-Sparks, Nev. 185
Speakers, talk-back:
 Union Pacific, Council Bluffs, Iowa yard 400
Special crossing protection control . 268
Speed measuring device:
 EJ&E yard, Gary, Ind. 882
Spring switches 1952 38
Star Headlight & Lantern Company 584
Statistics:
 Communications 1952 39
 Signaling 1952 33
Storage battery testing 906
Switch heaters, electric:
 NYC, electric interlocking, Lyons, N. Y. 478
Switches, sequence:
 RI, interlocking, Chicago 562
Switches, spring:
 CN CTC, 148 mi. Ontario 256
Switching, automatic:
 EJ&E yard, Gary, Ind. 881
- T**
- Talk-back speakers, portable:
 Lehigh Valley, L.C.L. transfer, Manchester, NYC 258
Talk backs:
 Loudspeaker system, StL-SF, St.

Louis yard 565

Tape recorder:
Car checking, St L-SF, St. Louis yard 565

Taper terminals 828

Technical progress and railroad motion picture 798

Telegraph office:
NYC, Albany, N.Y. 109

Telephone and telegraph circuits 1952 41

Telephone checking:
M-K-T, freight house, St. Louis.. 333
St. L-SF freight house, St. Louis 484

Telephone dispatching 1952 42

Telephones, dial system:
UP mail transfer, Council Bluffs, Ia. 343

Telephones, monitor:
M-K-T, freight house, St. Louis.. 334

Telephones, portable:
M-K-T, freight house, St. Louis 333
St. Louis-San Francisco freight house, St. Louis 484

Teleprinter:
NYC, Albany, N.Y. 109
Thomas A. Edison, Inc. 516

Toronto, Hamilton & Buffalo:
CTC 39 mi., Hamilton, Ont.-Welland 715

Track circuits:
Type C, JCL, Allentown, Pa. ... 631

Track removal:
CTC 18 mi., D&H, Waterford jct., N. Y. and Ballston Spa, Trade Publications:

AB-1 circuit breakers 436

A. C. line regulators & frequency changers 364

Ankoseal railroad signal wires and cables 364

Batteries, nickel cadmium 210

Belcon selenium rectifiers 364

Blue Book 838

Compound diffraction projector . 516

D.C. power amplifier 435

Direct inter-office communication 838

Edison carbonaire batteries for railway communication services 842

Electrical fittings 585

Electrical instruments 209

Electrical tapes 210

FE railroad radio 286

Germanium junction transistors . 66

Hemingray telephone and telegraph insulators 914

High gain omnidirectional antennas 286

Instant communication 64

Insulated wires and cables 516

Kellogg magnetic impulse counter 914

Key switches 838

Microwave in telephone toll plant 209

Millisec relays 584

Motor-generators 516

Multi-frequency ringers 585

"Mylar" polyester film 364

Onan electric generating plants.. 838

Parabolic reflectors 210

P-A-X telephone 209

Railroad jacks 209

Relay highlights No. 1. 364

Rust prevention 64

Self-locking taper connectors ... 838

Sound system 435

Tube data sheet 585

Traffic capacity:
Pan American Railway Congress 498

Train control, continuous:
Electron tubes 403

Train identification system:
Erie, Salamanca, N. Y. 54

Train radio failures can be reduced 826

Train-stop costs:
Pan American Railway Congress 498

Transistor applied in signaling 576

Transistors in cab signaling 652

U

Union Pacific:
CTC 217 mi. Kansas-Nebraska . 551

Dial phones, Council Bluffs, Iowa mail transfer 343

Loudspeaker communications, Council Bluffs, Ia. yard 416

Walkie-talkies and fixed radio, car inspection, Council Bluffs, Ia. 624

Union Switch & Signal-Division of Westinghouse Air Brake 436

W

Walkie-talkies:
Loudspeaker system, St. SL, St. Louis yard 565

St L-SF, Car checking, St. Louis 350

St L-SF, car inspectors, Springfield, Mo. 192

UP car inspection, Council Bluffs, Ia. 624

Wave form distortion problem:
Signal transmission in printing telegraph operation 633

Weight detector:
EJ&E yard, Gary, Ind. 882

Western Pacific:
Carrier communications system.. 556

What's the Answer?
Adjusting rectifiers 832

Anchor bolts 199

Autumn signal maintenance 900

Battery box 202

Battery renewal 354

Battery selection 200

Bootleg locations 832

Cable markers 132

Call-on signals 904

Capacitors on signal power lines 906

Centralized traffic control:
Testing 572

Circuit breakers 132

Circuit breakers in lieu of fuses . 358

Cleaning jack plugs 356, 572

Cleaning relay parts 421, 650

Code ringing 356

Communication maintenance ... 901

Conduit under pavement 650

Corrosive gases in tunnels 144

Damaged cable 645, 648

Double bonding 502

Electric lighting of switch lamps 359

Electric switch machines 146

Gasket for signal lamps 830

Grade markers 901

Graphic recording instruments .. 426

Inflammable liquid storage 146

Insulate rails on steel-deck bridges 276

Insulated rail joints 422

Interchange of railroad messages 834

Lightning arresters 132,

Line wire, removing 132

Loudspeaker protection against lightning 424

Loudspeaker wiring 572

Meter care 506, 902

Motor car protection 644, 650

Mounting electric switch machines 276

Painting signal equipment 273

Pole line cables 146

Portable telephones on passenger trains 144

Radio tubes 356, 650

Railroad radio antennas 573

Railroad radio test equipment .. 574, 648

Release of switch lock in CTC territory 274

Rules for proper storage of fully-charged wet batteries 830

Signal circuits-loudspeaker systems 144

Signal heads, location of 130

Signal power lines 833

Storage battery racks at interlockings 646

Storage battery testing 574

Switch circuit controller 146

Telephone sets for maintainers 199, 424

Testing lamps in approach-lighted signals 274, 573

Testing lamps in colorlight signals 422

Testing lamps in signals 144

Track circuit defects 504

Track circuit power 424

Track circuit trouble 902

Track relay pick-up 424, 831

Underground cable markers 199

Unusual trouble 902

Wheel checkers:
RF&P, Alexandria, Va. 197

Y

Yard, classification:
EJ&E yard, Gary, Ind. 881

JCL, Allentown, Pa. 627

Yard communication:
Pan American Railway Congress 498

St. Louis-San Francisco, St. Louis yard 565

Yard loudspeaker systems 1952 ... 42

Yard radio:
CB&Q, Omaha-Council Bluffs .. 409

St L-SF, St. Louis yard 568

UP car inspection, Council Bluffs, Ia. walkie-talkie 624

Wheeling & Lake Erie district, NYC&St L, Cleveland 270

Yard radio 1952 41

Personal Mention

A

Adamson, L. Talbot 844

Agnew, Edward J. 513

Allen, E. J. 707, 798

Ammon, Roscoe A. 580

Altland, N. L. 822

Arias, Bernardo E. 708

Armistead, A. B. 362

Armour, R. C. 582

Arnold, Russell B. 362

Ash, P. P. 431, 706, 800

Atwater, Bruce H. 512

Auch, W. F. 286

Austin, L. W. 284

- B**
- Baker, W. C. 209
 Balcom, H. D. 842
 Ball, J. I. 204
 Balliet, R. H. C. 62, 707, 908
 Banks, F. D. 518
 Barnhill, R. B. 135
 Beard, W. W. 804
 Bennett, Lawrence F. 582
 Berry, E. S. 214
 Bickel, Robert C. 582
 Billica, H. J. 848
 Bingaman, Pierce 278
 Binion, F. L. 911
 Black, Hugh 360
 Black, Roger A. 280
 Blake, John 212
 Blake, Dr. John T. 850
 Blasingame, Carroll W. 578
 Bornbeck, L. F. 138
 Bovard, W. P. 910
 Brock, Charles B. 432
 Brooks, C. F. 578
 Brooks, J. B. 911
 Brosha, W. C. 518
 Brown, Clifford A. 578
 Brown, C. E. 214
 Brown, E. F. 62, 706, 908
 Brown, George M. 435
 Brown, H. D. 284
 Brown, John S. 578
 Brown, W. G. 706, 802
 Buche, O. J. 204
 Burgin, E. A. 803
 Burkey, W. H. 214
 Burns, Robert H. 582
 Burwell, H. W. 64, 708, 820
 Bush, Ross L. 516
- C**
- Caden, W. F. 842
 Caine, Charles H. 518
 Calendine, R. A. 204
 Carey, O. G. 842
 Carlson, E. A. 282
 Carpenter, F. S. 911
 Carruth, Emmett L. 588
 Carson, D. V. 847
 Carter, William C. 518
 Case, Rogers, Jr. 133
 Cathcart, J. V. 850
 Chamberlain, Herbert W. 360
 Chamberlain, Kenneth 430, 516
 Childs, F. B. 138
 Clapp, H. P. 658
 Clark, Jesse 797
 Clarke, Owen 578, 707, 796
 Cleaves, Willis E. 66
 Cluver, H. J. 212
 Cone, LeRoy 435
 Conrad, Avon W. 134
 Corbus, E. T. 212
 Corcoran, J. J. 578
 Corrigan Eugene F. 844
 Cotter, J. C. 137
 Cox G. E. 286
 Crabb, V. L. 360
 Crawford, A. M. 706, 799
 Cress, W. R. 360
 Cunningham, K. K. 214
 Curtis, George L. 709
 Czeikowitz, R. F. 138
- D**
- DaCosta, E. H. 664
- Dana, C. E. 656
 Danneberg, P. A. 847
 Datz, Erwin 580
 Day, W. L. G. 842
 Delany, John H. 585
 DeMatteo, Ross A., II 66
 DeMeritt, E. B. 516, 585
 Derr, R. J. 708, 804
 Dickson, M. S. 582
 Diffenbacher, J. A. 214
 Dobrotzke, John 582
 Dod, C. W. 848
 Downey, Hall E. 850
- E**
- Early, J. A. 432
 East, I. H. 516
 Eberly, B. R. 518
 Ege, William W. 578
 Ege, William W., Jr. 843
 Elg, E. G. 848
 Ellis, C. D. 64, 136, 708, 818
 Ervin, Bob 362
 Essman, A. L. 62, 707, 908
- F**
- Fields, F. L. 848
 Firestine, D. E. 64
 Fisher, A. W. 514
 Fisher, W. R. 660
 Flanagan, Paul A. 64
 Fleisher, Henry T. 62, 430, 516, 706, 801, 908
 Fletcher, E. T. 848
 Flippen, John P. 843
 Fox, E. N. 62, 707, 908
 Frabutt, J. A. 846
 Fraser, D. V. 708
 Freehafer, J. E. 707, 796
 Freeman, S. W. 434
 Frost, Ralph J. 845
 Fuller, D. W. 62
- G**
- Galleher, R. C. 842
 Galvin, E. F. 908
 Gangler, C. C. 286
 Gardner, J. C. 848
 Garner, F. L. 204
 Garnett, Sylvain 435
 Garrett, H. B. 706
 Garton, C. I. 850
 Gates, Thomas E. 578
 Gay, L. M. 844
 Gilbert, A. M. 578
 Giles, W. F. Jr. 282-3
 Glenn, Robert B. 848
 Glosup, Virgil E. 362, 518
 Goodwin, J. Macdonald 435
 Goodwin, W. R. 209, 284
 Gowing, M. R. 360
 Groenendale, H. J. 843
 Groff, G. F. 850
 Grothmann, A. H. 64, 708
 Gunn, Clarence A. 912
- H**
- Hadlow, W. R. 64
 Haigh, A. S. 206
 Haines, H. A. 656
 Hale, L. B. 209
 Hall, R. L. 848
 Hammer, E. T. 518
 Hamson, Leonard E. 845
 Hansen, John W., Jr. 848
- Hanson, L. J. 284
 Harrison, G. T. 911
 Hart, T. T. 206
 Hartman, W. N. 62, 707, 795, 908
 Harvey, J. A. 518
 Hasselbacher, H. H. 284
 Hasselwander, Walter S. 360
 Hays, T. W. 62, 706, 795, 908
 Healey, C. Earl 435
 Healy, John H. 134
 Heimbach, Arthur E. 434, 908
 Hendrie, R. A. 64, 136, 709
 Hendry, A. J. 286
 Henricks, C. W. 134
 Henry, J. A. 912
 Herbst, Philip J. 514
 Hickerson, R. J. 847
 Hickok, L. P. 362
 Higginbottom, S. B. 62, 707, 908
 Hill, D. C. 657
 Hill, D. G. 138
 Hiltz, John P., Jr. 578
 Hitchcock, R. M. 578
 Holland, R. B. 284
 Holland, S. J. 278, 282
 Holm, A. 206
 Hornbeck, R. M. 67
 Houdek, C. F. 138
 House, D. R. 580
 House, C. H. 286, 578
 Howard, E. B., Jr. 664
 Howard, Paul D. 214
 Hudson, H. A. 707
 Hughel, P. S. 204, 709, 819
 Hungerford, Clark 706
 Hunt, A. S. 64, 709
 Huntman, H. E. 284
 Hutchinson, E. F. 284
- I**
- Isenberg, H. M. 432
- J**
- Jackson, L. A. 284, 362
 Jackson, T. J. 64
 Jacquays, I. C. 64
 Jarvie, James 204
 Jenne, W. J. 847
 Jensen, Arthur 516
 Johnson, C. H. 850
 Johnstone, J. R. 582
 Jones, A. E. 278
 Jones, D. O. 430
 Jones, H. W. Jr. 657
- K**
- Kaump, C. F. 282
 Kearney, L. E. 64, 709
 Keating, W. G. 845
 Keefer, R. Stuart 912
 Keen, Clifford H. 843
 Kendall, J. W. 138
 Kile, R. W. 432
 Killigrew, D. L. 908
 Kirkland, C. M. 914
 Kirsch, J. I. 706, 799
 Kirtz, W. L. 911
 Knight, Max M. 204
 Krahe, Lawrence R. 578
 Kremer, T. J. 664
 Krout, A. C. 656
 Kuehlwein, E. J. 138
- L**
- Lackey, J. H. 656

Lamons, Robert P. 582
 Lansing, H. L. 746, 804,
 LaValle, F. W. 138
 Leberknight, Dr. Charles E. 433
 Legrand, Russell E. 212
 Leib, F. E. 848
 Leonard, Emmett L. 516
 Liles, H. C. 911
 Lindsay, Albert H. 134
 Lockerby, K. M. 708
 Loucks, J. L. 135
 Loveland, J. W. 212
 Lowe, D. D. 138
 Lueders, Tom 362
 Luelling, H. B. 284
 Luigs, D. L. 912
 Lundy, B. A. 910

M

McCracken, H. F. 660
 McElroy, William F. 580
 McGill, W. A. 64
 McGuire, L. 848
 McHale, P. J. 282
 McIlvane, William J. 578
 McLean, T. A. 842
 McMahan, M. W., Jr. 204
 McNabb, J. L. 912
 McNamar, F. M. 518
 McNeill, B. L., Jr. 284
 McNemar, D. R. 578
 MacDonald, Angus A. 280
 MacLeod, D. N. 845
 MacQuarrie, J. D. 821
 Manning, Thomas J. 516
 Marak, Charles T. 286
 May, R. G. 706
 Maynard, H. A. 804
 Megridge, C. J. 204
 Menagh, F. H. 64, 516, 709,
 Menzies, N. W. 137
 Metz, Albert F. 912
 Meyers, Christ 664
 Miller, J. V. 578
 Miller, Oscar E. 64
 Mills, S. N. 707,
 Miller, S. W. 820
 Mitchell Vernon S. 432
 Moldenhauer, A. 360
 Molusky, G. I. 842
 Mooney, J. 518
 Moore, Ernest J. 582
 Moore, J. A. 578
 Moore, J. H. 657
 Morgan, H. G. 136
 Morris, D. R. 64
 Morris, Roy Lee 848,
 Morrow, George W. 582
 Moynihan, J. F. 582

N

Nagel, R. G. 286
 Neale, L. W. 845
 Neil, William D. 64, 709,
 Nelson, G. A. 908
 Niese, J. L. 64, 204, 578,
 Nester, Roy J. 582
 Noble, S. E. 430,
 Nurse, David W. 912
 Nuttall, R. T. 847

O

O'Brien, J. E. 709,
 O'Connell, Fred 848
 O'Loughlin, F. M. 286
 Olson, C. A. 204

Orr, H. T. 204
 Ott, L. J. 280
 Owen, F. C. 850

P

Panje, W. C. 284
 Parker, W. O. 286
 Parker, W. R. 912
 Parkinson, J. A. 708
 Parnell, A. E. 284
 Patterson, William J. 578
 Patton, F. B. 656
 Pavell, J. P. 518
 Peglow, W. F. 432
 Pelikan, J. M. 664
 Persinger, C. 911
 Pescud, George H. 844
 Pickens, C. R. 212
 Pipas, George 137
 Pipas, W. S. 432
 Platt, E. B. 706,
 Platt, T. J. 64
 Porter, Leslie B. 518
 Powleson, C. E. 284
 Pulham, W. W. 709,
 819

R

Ragan, J. G. 204
 Ramon, Ray 842
 Ratchford, James J. 844
 Raymond, L. A. 845
 Reay, Sam 362
 Reynolds, Herbert E. 436
 Rhinehart, M. K. 850
 Richardson, Clyde 518
 Richardson, S. D. 842
 Ridley, R. C. 848
 Robertson, Allan S. 513
 Rogers, J. D. 64,
 Rosenberg, Arnold 66
 Rudd, William B. 588
 Russell, John M. 204

S

Salerno, P. J. 910
 Salmonson, W. G. 62, 64, 708,
 Sampson, Charles E. 908
 Sands, Leo G. 848
 Sass, C. H., Jr. 433
 Savage, W. J. 282
 Schachat, Herbert 908
 Schlentz, J. N. 580
 Schmidhamer, S. F. 284
 Schultzbarger, J. M. 518
 Scott, H. A. 578, 707,
 Scott, R. M. 803
 Seidel, R. B. 284
 Sheary, R. D. 660
 Shepardson, V. P. 62, 706,
 Simper, E. T. 284
 Simpson, J. I. 908
 Sines, R. 662
 Sjoberg, Frank 911
 Sloop, Francis V. 138
 Smeltzer, V. O. 286
 Smith, A. H. 908
 Smith, J. R. 64,
 Smith, P. W. 708
 Sovik, R. A. 434
 Sowards, C. C. 360
 Spillman, Ralph M. 848
 Starr, Eugene W. 286
 Steele, R. C. 204
 Steinbright, F. L. 908
 Sterling, J. R. 657
 Stilwell, W. H. 821

Stone, J. R. 434
 Stor, A. L. 662
 Stuckey, Raymond E. 912
 Sveda, W. J. 204

T

Taff, A. W. 850
 Talbert, J. F. 588
 Taylor, J. K. 209
 Tegeler, F. A. 282
 Thomas, G. K. 707,
 Thomas, J. R. 801
 Thompson, E. A. 206
 Thompson, L. A. 362
 Thompson, Owen E. 843
 Thompson, T. B. 64
 Thomsen, D. H. 136
 Thomsen, D. H. 284
 Thorn, C. C. 518
 Timmons, H. F. 748
 Tolley, J. A. 580
 Tompers, K. C. 214
 Travis, C. H. 847
 Troth, R. W. 62, 706, 795,
 908

V

Van Benthuse, J. O. 362
 Vance, Wm. G. 214
 Van Eaton, G. R. 709,
 Van Lear, W. B. 824
 Van Loon, John T. 516
 Van Wagner, Paul 847
 Verbar, L. E. 848
 Vreeland, J. S. 709,
 910

W

Wade, J. B. 660, 843
 Wainwright, J. B. 656, 843
 Walker, Myron 844
 Wallis, J. H. 708
 Walsh, Thomas S. 133
 Warner, E. A. 908
 Weagly, C. F. 847
 Webb, H. E. 209
 Werthmuller, Louis S. 286
 West, Maynard P., Jr. 843
 Weyer, J. C. 578
 White, J. R. 64, 708
 White, K. C. 709, 822
 Whitehurst, William M. 516, 576
 Whitney, Merton W. 842
 Wiggins, Albert M. 513
 Wigton, T. W. 284
 Wilkinson, S. L. 204
 Wilkinson, V. R. 204
 Willson, H. G. 662
 Winslow, Robert 134
 Wirz, S. J. 660
 Wolff, H. W. 67
 Wood, L. A. 284
 Woodbury, John 362
 Wright, F. G. 206
 Wright, H. E. 209
 Wyant, John L. 432

Y

Yarbrough, L. B. 707, 799
 Yessen, C. W. 847
 Youmans, Edward D. 912

Z

Zeller, M. N. 138
 Zulantz, George K. 66