



VOLUME XXXVI

JANUARY 4th—JUNE 28th, 1935.

ALL RIGHTS RESERVED

Published from the Offices of "THE WIRELESS WORLD"
ILIFFE & SONS LTD., DORSET HOUSE, STAMFORD ST., LONDON, S.E.1.

Price Threepence net.

INDEX—VOLUME XXXVI

JANUARY 4th—JUNE 28th, 1935.

The following abbreviations used after page numbers will save time and labour by indicating the nature of the reference, thus giving an idea of its value or otherwise, to the intending reader. *B.B.* = Broadcast Brevities. *Constr.* = Constructional article. *Corres.* = Correspondence. *Edit.* = Editorial. *Gen.* = General article. *H.T.* = Hints and Tips. *Illus.* = Illustration. *L.G.* = Listeners' Guide. *R.P.* = Readers' Problems. *S.P.* = Short paragraph. *Appar. Commer.* = Apparatus, Commercial. *C.N.* = Club News. *C.T.* = Current Topics. *F.G.* = Free Grid. *R.R.* = Random Radiations. *Rec. Commer.* = Receivers, Commercial.

GENERAL INDEX

ABAC Calculator, 385 (*Illus.*)

- Abacs :
 - I. The Decibel, 267
 - II. Resistances in Parallel and Capacities in Series, 390
 - III. Design of Attenuation Circuits of Constant Resistance, 421
 - IV. Iron Losses in Mains Transformers, 566
 - V. The Self-Inductance of Single-layer Coils for Short Waves, 650

Absolute Loudness, Judging by Ear, 636 (*Gen.*)

- Accumulator Criticisms, 239 (*R.R.*)
- Accumulators, 527 (*H.T.*)
- Acoustic Side of Broadcasting, 130 (*Gen.*)
 - Spectroscope, 467 (*Gen.*)
- Aerial Coupling, 278 (*R.P.*)
 - Munich Anti-Fading, 44 (*S.P.*)
 - Peculiarities, 628 (*R.P.*)
 - Transformers, 617 (*Gen.*)
- Aerials, 170 (*H.T.*); 177 (*R.R.*)
 - and Lightning, 622 (*R.R.*)
- Air Collisions and D.F., 558 (*S.P.*)
- Aircraft Telephony, 91 (*R.R.*)
- Alan, A. J., 405 (*B.B.*)
- All-Wave Coil Matching, 394 (*H.T.*)
 - Receiver, 594 (*R.R.*)

Amateur Licence Political Clause, 192 (*C.T.*)

- Transmitting Activities, 259 (*C.T.*)
- Amateurs Banned in Peru, 85 (*C.T.*)
- America, 15, 85, 259, 311, 337, 563 (*C.T.*); 274 (*R.R.*)
- American Broadcasting Networks, 215 (*C.T.*)
 - High Quality Receiver, 626 (*Corres.*)
 - Programmes, 453, 463 (*R.R.*)
 - Receiver Design, 301 (*R.R.*)
 - Receivers in India, 215 (*C.T.*)
 - Sound News Bulletin, 468 (*R.R.*)
 - Trade, 489 (*C.T.*)

Amplification, Calculation and Measurement, 278 (*R.P.*)

- Announcer's Faultless German, 63 (*C.T.*)
- Anti-Fading Aerial at Munich, 44 (*S.P.*)
 - Noise League Exhibition, 595 (*Gen.*)
- Aperiodic Aerial Transformers, 617 (*Gen.*)
- Apparatus Reviewed (*see under* APPARATUS, COMMERCIAL, and RECEIVERS, COMMERCIAL)
- A.R.R.L., 395 (*C.T.*)
- Austria, 217 (*B.B.*); 402 (*R.R.*)
- Austrian Statistics, 287 (*C.T.*)
- Australia, 215 (*C.T.*)
- Australian Broadcasting, 395 (*C.T.*)
- Australia's Wavelength Plan, 413 (*C.T.*)
- Automatic Volume Expansion, 574 (*R.R.*)
- A.V.C. Amplified, 242 (*R.P.*)
 - Problems, 406 (*R.P.*)
 - and Q.A.V.C., 128 (*R.P.*)
 - Visual Tuning or Q.A.V.C., 83 (*S.P.*)

BABY Alarm, 12 (*H.T.*)

- Carriage Radio, 141 (*C.T.*)
- Background Noises, External (*see under* TROUBLE, EXTERNAL)
- Noises from Mains or Receiver (*see under* TROUBLE, INTERNAL)
- Baffles (*see under* LOUD SPEAKERS)
- Battery, Gordon Magnesium, 493 (*Gen.*)
 - Receiver Conversion, 100 (*R.P.*)
 - Receiver Design, 468 (*R.R.*)
- B.B.C. :
 - Announcers, 99 (*B.B.*)
 - Announcers' Pronunciation, 300, 468 (*R.R.*)
 - Announcers, Stage Fright, 37 (*B.B.*)
 - Annual Report, 217 (*B.B.*)
 - Anti-Fading Costs, 71 (*B.B.*)
 - Ashbridge, Sir Noel, 563 (*B.B.*)
 - Bombing Control Room, 201 (*B.B.*)

- Boxing, 99 (*B.B.*)
- Building Extensions, 241 (*B.B.*)
- Boult in America, 149 (*B.B.*)
- Bouquet, 377 (*Corres.*)
- Braille Language Lessons, 241 (*B.B.*)
- Braille Talks, 528 (*B.B.*)
- Breakfast Broadcasts, 71 (*B.B.*)
- Broadcast English, 71 (*B.B.*)
- Cable Ship Broadcasts, 615 (*B.B.*)
- Canadian Relays, 56 (*S.P.*)
- Carpendale, Vice-Admiral Sir Charles, 477, 589 (*B.B.*)
- Charter Committee, 413 (*C.T.*); 457 (*Edit.*); 477 (*B.B.*)
- Charter Renewed, 241 (*B.B.*)
- Cock, Gerald, 201, 563 (*B.B.*)
- Chairman, 217 (*B.B.*)
- Christmas Programme, 113 (*B.B.*)
- City of Song, 99 (*B.B.*)
- Cresswell, Peter, 327 (*B.B.*)
- Dampier, Claude, 347 (*B.B.*)

APART from the General Index, the following fourteen classified indices, arranged alphabetically, are provided for the convenience of readers:—

- APPARATUS (Commercial).
- APPARATUS (Constructional).
- BOOKS.
- BROADCASTING STATIONS.
- GRAMOPHONES AND AMPLIFIERS.
- LOUD SPEAKERS.
- RECEIVERS (Commercial).
- RECEIVERS (Constructional).
- SHORT WAVES.
- TELEVISION.
- TROUBLE (External Interference).
- TROUBLE (Internal).
- TUNING.
- VALVES.

- Dance Bands, 468 (*R.R.*)
- Dawney, Col. Alan, 19, 149, 327 (*B.B.*)
- Davies, Sir Walford, 347 (*B.B.*)
- Decentralisation, 649 (*R.R.*)
- Derby, The, 501 (*B.B.*)
- Doubtful Humour, 113 (*B.B.*)
- Dramatic Control Unit, 408 (*Gen.*)
- East Anglia, 277 (*B.B.*)
- Educational Broadcasts, 629 (*Edit.*)
- Effects Studio, 275 (*Illus.*)
- Empire Broadcasting, 113, 149, 217, 241, 405, 440, 477, 501, 529, 615, 647 (*B.B.*); 301, 622 (*R.R.*); 337 (*C.T.*); 581 (*Edit.*); 652 (*Corres.*)
- Empire Exchange, 19 (*B.B.*); 155 (*Corres.*)
- Engineer Mauled by Tiger, 550 (*R.R.*)
- Expanding Premises, 623
- Finance, 347 (*B.B.*)
- Foreign Relays, 453 (*R.R.*)
- Free Variety Seats, 615 (*B.B.*)

- Freedom Broadcasts, 293 (*B.B.*)
- Frequency Checking Tests, 133 (*S.P.*)
- Gaelic Broadcasting, 528 (*B.B.*)
- General Advisory Council, 179, 201 (*B.B.*)
- Geraldo's Band Wants Criticism, 37 (*B.B.*)
- Gielgud, Val, 327 (*B.B.*)
- Graves, Cecil, 563 (*B.B.*)
- Guest Nights, 241 (*B.B.*)
- Hall, Henry, 501 (*B.B.*)
- Hulbert, Claude, 347 (*B.B.*)
- India Reception, 430, 604 (*Corres.*)
- India Talks, 19 (*B.B.*)
- Ipswich, 277 (*B.B.*)
- Isle of May, 563 (*B.B.*)
- January Review, 124 (*R.R.*)
- Jubilee Floodlights, 427 (*B.B.*)
- Jubilee Programmes, 71, 276, 293, 347, 369 (*B.B.*); 433 (*Edit.*); 502 (*R.R.*)
- Jubilee Programmes and P.R.S., 449 (*B.B.*)
- Jubilee Scrapbook, 477 (*B.B.*)
- Judge Jeffreys, 71 (*B.B.*)
- Kester, Max, 347 (*B.B.*)
- Keys Ceremony, 647 (*B.B.*)
- King's Microphone, 293 (*B.B.*)
- King's Jockey, 528 (*B.B.*)
- King's Sixteen Broadcasts, 293 (*B.B.*)
- Liebstraume, 99 (*B.B.*)
- Lotbinière, 477 (*B.B.*)
- Maida Vale Miniature Organ, 19 (*B.B.*)
- Manchester Luncheon, 369 (*B.B.*)
- Maschwitz, Eric, 477 (*B.B.*)
- Microphone at Play 477 (*B.B.*)
- Mobile Recording Unit, 386 (*Gen.*)
- Monthly Review, 19 (*B.B.*)
- Multi-Studio Technique, 277 (*B.B.*)
- Murray, Gladstone, 37, 179, 327 (*B.B.*)
- Musical Festival, 427 (*B.B.*)
- Nationals, Power Reduction, 293 (*B.B.*)
- Naval Review, 477 (*B.B.*); 550 (*R.R.*)
- Needs Plays, 543 (*B.B.*)
- New Year's Honours, 37 (*B.B.*)
- Newcastle Rejuvenated, 149 (*B.B.*)
- News in Retrospect, 19 (*B.B.*)
- Nightingale Recording, 427 (*B.B.*)
- Nomenclature, 327 (*B.B.*)
- North National Quality 454 (*R.R.*)
- Nottingham Transport Tests, 241 (*B.B.*)
- Nottingham Studio, 427 (*B.B.*)
- O'Donnell, B. Walton, 327 (*B.B.*)
- Orchestra in Brussels, 201 (*B.B.*)
- Parks Loud Speakers, 528 (*B.B.*)
- Productions Department 327 (*B.B.*)
- Programme Cutting, 647 (*B.B.*)
- Programme Hours, 327 (*B.B.*)
- Pitch Distortion in Empire Exchange, 155 (*Corres.*)
- Power Reduction, 347 (*B.B.*); 430 (*Corres.*)
- R.A.F. Review, 477 (*B.B.*)
- Radio Theatre Opens, 201 (*B.B.*)
- Recorded Programme Exchange, 179 (*B.B.*)
- Recorded Programmes, 231 (*Edit.*)
- Recording Methods, 449, 647 (*B.B.*)
- Regions, 647 (*B.B.*)
- Reith's, Sir John, Future, 179 (*B.B.*)
- Ribbon Microphones, 543 (*B.B.*)
- Round the World in Sixty Minutes, 99 (*B.B.*)
- Russian Orchestra, 369 (*B.B.*)
- Saar Plebiscite Broadcast, 31 (*C.T.*); 99 (*B.B.*)
- St. Paul's Acoustics, 449 (*B.B.*)
- St. Paul's Empire Services, 449 (*B.B.*)
- School Wireless Cost, 637 (*C.T.*)
- Schools Broadcast, 647 (*B.B.*)
- Scotland, 528 (*B.B.*)
- Scrapbook for 1905, 405 (*B.B.*)
- Service from Birmingham, 259 (*C.T.*)
- Single Sideband Broadcasting, 25 (*Edit.*); 37 (*B.B.*)
- Songs from the Shows, 277 (*B.B.*)

— South African Broadcasting, 352 (R.R.); 357 (Edit.)
 — Stainless Stephen, 347 (B.B.)
 — Standard Frequency Transmissions 25, 77 (Edit.); 98 (Corres.) 649 (R.R.)
 — Stoker Announcer, 228 (R.R.)
 — Summer Programmes, 427 (B.B.)
 — Tatsfield Relays America, 179 (B.B.)
 — Tauber, Richard, 543 (B.B.)
 — Taxi Rank, 528 (B.B.)
 — Television Chief, 179 (B.B.)
 — Three Station Synchronisation, 201 (B.B.)
 — Transmission Quality 304 (Corres.)
 — Trooping the Colour, 477 (B.B.)
 — U.S.A. Exchange Programmes, 179 (B.B.); 196 (R.R.)
 — Wales, 241, 405 (B.B.)
 — Wales and the West, 454 (R.R.)
 — Watt, John, 37, 347, 528 (B.B.)
 — Wavelength Changes, 113, 217 (B.B.); 143 (R.R.)
 — Welsh Director, 501 (B.B.)
 — Whitley, J. H., Council Proposed, 427 (B.B.)
 — Whitley, J. H., Obituary, 149 (B.B.)
 — Youth Looks Ahead 217 (B.B.)
 — Zoo Broadcasts, 449 (B.B.)
 Beating the Book, 454 (R.R.)
 Belgium, 215, 311 (C.T.)
 Bell Transformers, 406 (R.P.)
 Ben Nevis Reception, 463 (C.T.)
 Berlin Broadcasting House, 259 (C.T.)
 Biassing and Grid Decouplers, 145 (R.P.)
 Birds and Radio, 395 (C.T.)
 Blessings of Radio (Times Extract), 214 (S.P.)
 Blind Fund, 112 (S.P.)
 — Landing System, 332 (Gen.); 502 (Corres.)
 Body Radiations, 595 (R.R.)
 Books Received (see under BOOKS)
 Boom, Why Do Listeners Like, 126 (Gen.)
 Boys' Wireless League, 413, 563 (C.T.)
 British and American Receivers, 652 (Corres.)
 — Receivers for Empire Listeners, 581 (Edit.); 652 (Corres.)
 BROADCAST BREVITIES, 19, 37, 71, 99, 113, 149, 179, 201, 217, 241, 277, 293, 327, 347, 369, 405, 427, 449, 477, 501, 528, 543, 563, 589, 615, 647
 Broadcasting (see under B.B.C.)
 — Stations (see under BROADCASTING STATIONS)
 — and Television Technique, 207 (Edit.)
 Brussels: Albert Memorial Exhibit, 287 (C.T.)
 Bulgaria, 31 (C.T.)
 Bus Radio, 536 (C.T.)

CABLE Cutting Epidemic, 235 (C.T.)
 C.A.C. Receivers and School Broadcasts, 509 (S.P.)
 Cairo Conference, 259 (C.T.)
 Canadian Relays, 56 (S.P.)
 Car Radio, 124, 503, 551 (R.R.); 215, 337, 489, 517, 536, 563 (C.T.); 403 (Gen.); 519, 594 (S.P.)
 — Radio; Finland, 649 (R.R.)
 — Radio; France, 365 (C.T.)
 — Radio; Home-made Midget Set, 649 (Illus.)
 — Radio Licences, 551 (R.R.)
 — Radio for Paris Taxis, 235 (C.T.)
 — Radio; U.S.A., 141 (C.T.)
 Cardiograph, 388 (Gen.); 480, 577, 652 (Corres.)
 Catalogues Received (see under BOOKS)
 Catalonia, 637 (C.T.)
 Cathode Ray (see under TELEVISION and VALVES)
 Ceylon, 337 (C.T.)
 China, 235 (C.T.)
 Chinese Delicacy, 463 (C.T.)
 Choke Design, 641 (Gen.)
 Choosing a Receiver, 266 (Gen.)
 City of London Phonograph and Radio Society, 206 (C.N.)
 Class B. Amplification, 468 (R.R.)
 — B. Transformers, 280 (Gen.)
 CLUB NEWS, 34, 102, 206, 340
 Coil Capacity Formula, 340 (Gen.)
 — Design, 50 (R.P.)
 — Matching, 394 (H.T.)
 Cold Cathode Valve, 95 (S.P.)
 Commentaries Without Cables, 49 (S.P.)
 Commercial Products (see under APPARATUS, COMMERCIAL and RECEIVERS, COMMERCIAL)
 Components (see under APPARATUS, COMMERCIAL)
 Condenser Stops, 12 (H.T.)
 Confiscating Australian Receivers, 15 (C.T.)
 Constructional Articles (see under APPARATUS, CONSTRUCTIONAL and RECEIVERS, CONSTRUCTIONAL)
 CORRESPONDENCE, 48, 72, 98, 155, 178, 200, 229, 276, 304, 353, 378, 430, 454, 480, 502, 554, 577, 604, 626
 Coupling, Constant, 394 (H.T.)
 — Devices, Low-Frequency, 49 (Corres.)
 Coventry Short-Wave Radio Club, 368 (C.N.)
 Croydon Radio Society, 34, 102, 206, 368 (C.N.); 215 (C.T.)
 — Wireless Society, 34 (C.N.)
 Crystal Receiver Range, 604 (Corres.)
 CURRENT TOPICS, 15, 31, 63, 85, 109, 141, 167, 192, 215, 235, 259, 287, 311, 337, 365, 395, 413, 439, 463, 517, 541, 563, 589, 615, 637
 Czechoslovakia, 31, 259, 365 (C.T.)

DANISH Anti-Pirate Campaign, 541 (C.T.)
 — Cartoon, 530
 — Mystery, 517 (C.T.); 627 (Corres.)
 Data Charts (see Abacs)
 D.C. Sets, 230 (R.P.)
 Deaf Aid Wireless, 376 (R.R.)
 — Fund, 109 (C.T.)
 Death from Shock, 594 (R.R.)
 Denmark, 109, 215, 365 (C.T.); 647 (B.B.)
 Designing Receivers, 78, 114 (Gen.)
 Desk Frame Aerial, 57 (H.T.)
 Detector as Radio Frequency Load, 193 (Gen.)
 D.F. and Air Collisions, 558 (S.P.)
 — for Air Liners, 31, 63 (C.T.)
 — Beacons on Ultra-Short Waves, 85 (C.T.)
 Diode Tuning Meter, 406 (R.P.)
 Distant Reception Notes (see RECEPTION NOTES)
 Distortion (see under TROUBLE)
 Drilling American Cavalry by Wireless, 489 (C.T.)
 Droitwich Reception in France, 49 (Corres.)
 Duels Broadcast in France, 15 (C.T.)
 Durham Wireless Pioneers, 215 (C.T.)
 Dutch Empire Station, 2 (Gen.)

EARTH'S, 177 (R.R.)
 Easter in Jerusalem, 327 (B.B.)
 Eckersley on Sidebands, 413 (C.T.)
 EDITORIAL COMMENT, 1, 25, 51, 77, 103, 129, 157, 181, 207, 231, 253, 279, 305, 331, 357, 381, 407, 433, 457, 489, 507, 531, 555, 581, 605, 629
 Egg-Hatching by Wireless, 389 (C.T.)
 Egypt, 15 (C.T.)
 Egyptian Signals, 109 (C.T.)
 Electrical Interference (see under TROUBLE)
 — Organ Tones, 514 (Gen.)
 Electricity in the Human Body, 595 (R.R.)
 Emission and H.T. Voltage, 100 (R.P.)
 Empire Broadcasting (see B.B.C.)
 — Listeners Want British Receivers, 581 (Edit.) 652 (Corres.)
 European Reception, 282 (S.P.)
 EXHIBITIONS:
 — America, 439 (C.T.)
 — Berlin, 63, 517 (C.T.)
 — Daily Mail Ideal Home, 192, 311 (C.T.); 352 (R.R.)
 — Dublin, 541 (C.T.)
 — Leicester Amateur, 311 (C.T.)
 — Olympia, 235, 489 (C.T.); 300, 502, 550 (R.R.); 543 (B.B.)
 — Paris, 141, 413, 463 (C.T.)
 — Paris, Short-Wave, 85 (C.T.)
 — Physical Society, 45 (S.P.)
 — Physical Society Report, 73 (Gen.)
 — Prague, 85 (C.T.)
 Exide News, 527 (H.T.)
 Expanding the Music, 461 (Gen.)
 Exponential Horns (see under LOUD SPEAKERS)
 Export Figures, 235 (C.T.)

FADING Measurements, 338 (Gen.)
 Farmers and Wireless, 85 (C.T.)
 Ferranti's New Works, 578 (S.P.)
 Field-Strength Measurement, 6 (Gen.)
 Fine Tuning, 438 (H.T.)
 Finland, 109, 395, 563 (C.T.)
 Flat Catching, 67 (R.R.)
 Flats and Relays, 515 (R.R.)
 Fleming, 439 (C.T.)
 Flowers and Music, 637 (C.T.)
 Formula for Coil Capacity, 340 (Gen.)
 Foundations of Wireless:
 — VII Leading to the Tuned Circuit, 21 (Gen.)
 — VIII The Series-Tuned Circuit, 46 (Gen.)
 — IX More About Tuned Circuits, 96 (Gen.)
 — X The Magnetic Effects of a Current, 122 (Gen.)
 — XI Transmission and Reception in Simplest Terms, 152 (Gen.)
 — XII Simple Triode Valve, 202 (Gen.)
 — XIII How the Triode Amplifies, 226 (Gen.)
 — XIV The Valve as Detector, 248 (Gen.)
 — XV More About Detectors, 302 (Gen.)
 — XVI Single Valve Set, 328 (Gen.)
 — XVII Reaction and Sidebands, 350 (Gen.)
 — XVIII Problems of High Frequency Amplification, 374 (Gen.)
 — XIX Simple Screened Tetrode, 428 (Gen.)
 — XX Selectivity in the H.F. Amplifier, 451 (Gen.)
 — XXI Improvements in the Screened Grid Valve, 478 (Gen.)
 — XXII L.F. Amplification and the Output Triode, 504 (Gen.)
 — XXIII Other Output Valves, 548 (Gen.)
 — XXIV Outlines of Set Design, 601 (Gen.)
 — XXV Superheterodyne and Its Frequency Changer, 624 (Gen.)
 — of Wireless, Correction (Pt. V), 22
 Frame Aerial Desk, 57 (H.T.)
 — Aerial Difficulties, 406 (R.P.)
 France, 141, 192, 235, 311, 413, 439, 489, 589, 615 (C.T.)
 — Advertising, 31 (C.T.)
 — Broadcasting House, 85 (C.T.)
 — Broadcasting Reorganisation, 167, 215, 337, 489 (C.T.); 228 (R.R.)
 "Free Grid," 378 (Corres.)
 French Morals, 63 (C.T.)
 Frequency Changer for Short Waves, 213 (Gen.)
 — Checking Tests, 133 (S.P.)
 — Separation, 1, 51, 77 (Edit.); 72, 98, 155, 276, 353 (Corres.); 85 (C.T.)
 — Transformation, 174 (Gen.)
 Fully Tuned Aerials, 576 (R.P.)
 Fuses in Receivers, 554 (Corres.)

GANGING, 12 (H.T.); 264, 648 (Gen.); 576 (R.P.)
 — and Reaction, 500 (R.P.)
 German Early Morning Programmes, 454 (R.R.)
 — Radio Industry and Close Season, 109 (C.T.)
 — Receivers for the New Year, 171 (Gen.)
 Germany, 31, 63, 141, 192, 235, 541, 563, 615 (C.T.); 277 (B.B.)
 Golders Green Society, 489 (C.T.)
 — Green and Hendon Radio and Scientific Society, 34 (C.N.)
 Gordon Magnesium Battery, 493 (Gen.)
 G.P.O. Detector Van, 439 (C.T.)
 Gramophone Automatic Stop, 626 (Corres.)
 — Lawsuit, 563 (C.T.)
 — Record Improvements, 554, 652 (Corres.)
 — Recording of Programmes, 612 (Gen.)
 Gramophones, Ancient, 377 (R.R.)
 Greece, 31 (C.T.)

HARMONICS, 298 (Gen.); 368 (Correction)
 Heart Testing by Cathode Ray, 388 (Gen.); 480, 577, 652 (Corres.)
 High Fidelity (see Quality of Reproduction)
 — Fidelity over Transmission Lines, 542 (Gen.)
 — Note Diffuser, 185 (Gen.)
 HINTS AND TIPS, 12, 57, 170, 379, 394, 410, 438, 471, 527
 Hoddesdon and District Radio Society, 340 (C.N.)
 Holland's Empire Station, 2 (Gen.)
 Home Set V. Branch, 81 (Gen.)
 Howard-Grand Receiver, 626 (Corres.)
 Howling (see under TROUBLE, INTERNAL)
 H.T. Eliminators, 348 (R.P.)
 — Generators, 500 (R.P.)
 Hum (see under TROUBLE, INTERNAL)
 Hungary, 637 (C.T.)
 Hymnology Up-to-Date, 463 (C.T.)

ICELAND, 85 (C.T.)
 I.E.E., 287 (C.T.)
 — Committee Incompetence, 353 (Corres.)
 — Lectures (see under Lectures)
 — Regulations, 62 (Gen.)
 Iffle and Relays, 600 (R.R.)
 India, 403, 489 (C.T.)
 Indian Broadcasting, 63, 311 (C.T.); 90 (R.R.)
 Instability (see under TROUBLE, INTERNAL)
 Interference (see under TROUBLE)
 International DX'ers Alliance, 368 (C.N.)
 Interval Signals: German, 85 (C.T.)
 — Signals; Provincial, 37, 99 (B.B.)
 Inverters, 143 (R.R.); 171 (S.P.)
 Invisible Man, 554 (Corres.)
 Ionosphere Investigations, 167 (C.T.)
 Ireland, 235 (C.T.)
 Irish Broadcasting, 63 (C.T.); 347 (B.B.)
 — Radio Society, 259 (C.T.)
 Italian Foreign Language Broadcast, 463 (C.T.)
 — Radio Components, 265 (S.P.)
 Italy, 141, 563 (C.T.)
 Italy's Broadcasting Plans, 610 (Gen.)
 I.W.T., 311 (C.T.)

JAPAN, 31, 235, 589 (C.T.)
 Japanese English News Station, 637 (C.T.)
 — Telephone Service, 259 (C.T.)
 Jewish Broadcasting Station, 287 (C.T.)
 Jubilee Competition, 413 (C.T.)
 — Films and Gramophone Records, 293 (B.B.)
 — Licences, 431 (R.R.)
 Judging Loudness by Ear, 636 (Gen.)

LABORATORY Tests (see under APPARATUS, COMMERCIAL)
 Languages and Listening, 239 (R.R.)
 Lay Journal Programme Futility, 330 (R.R.)
 League of Nations Broadcast, 141 (C.T.)
 Learning Morse, 591 (Gen.)
 Lectures:
 — I.E.E. Crystal Oscillators, 215 (C.T.)
 — I.E.E. Programme, 85 (C.T.)
 — I.E.E. Receiver Testing, 192 (C.T.)
 — Polytechnic, Television, 413 (C.T.)
 — Science Museum, Optical Principles of Radio, 167 (C.T.)
 — Sir John Cass, Technical Institute, Physics of Radio, 31 (C.T.)
 Leicester Radio Society, 311 (C.T.)
 Licences:
 — American, 287 (C.T.)
 — British, 85, 215, 235, 413, 517 (C.T.); 90 (R.R.)
 — Car Radio, 551 (R.R.)
 — Danish, 167 (C.T.)
 — French, 109, 167, 235, 439 (C.T.); 376 (R.R.)
 — German, 15, 63, 192, 235, 287, 489 (C.T.)
 — Italian, 235, 413, 439 (C.T.)
 — New Zealand, 259 (C.T.)
 — Polish, 274 (R.R.)
 — Russia, 463 (C.T.)
 — Swiss, 337 (C.T.)
 Lifeboat Radio, 395 (C.T.)
 LISTENERS' GUIDE, 10, 40, 68, 92, 118, 146, 172, 198, 220, 246, 270, 296, 322, 342, 372, 398, 422, 440, 472, 498, 522, 546, 566, 596, 618, 644
 Loaded Transformers, 606 (Gen.)
 Local Conditions, 266 (Gen.)
 Lorenz Blind Landing System, 332 (Gen.); 502 (Corres.)
 Loud Speakers (see under LOUD SPEAKERS)
 Loudness, Absolute, Judging by Ear, 636 (Gen.)
 Low Frequency Coupling Devices, 49 (Corres.)
 LT and HT in the Wilds, 164 (Gen.); 229, 276 (Corres.)
 Luxembourg Effect, 178 (Corres.)
 Luxembourg Effect on B.B.C. Stations, 200 (Corres.)

MACBETH, Dr., J. C. H., 365 (C.T.)
 Macon and Titanic, 228 (R.R.)
 Mains Trouble (see under TROUBLE, INTERNAL)
 Malta, 501 (B.B.)
 Man-Made Broadcasting, 311 (C.T.)
 Manchester Chapter of the International Short Wave Club, 102 (C.N.)
 Manufacturer's Products (see under APPARATUS, COMMERCIAL and RECEIVERS, COMMERCIAL)
 Measurements: Fuses and Weights and Measures Act, 80 (S.P.)
 Medical Aid by Wireless, 463, 541 (C.T.); 603 (S.P.)
 Medium Wave Broadcasting, the Future, 507 (Edit.)
 Metal Chassis Risks, 170 (H.T.)
 — Rectifiers (see under VALVES)
 Meters; How to Use Them, 633 (Gen.)
 Microphone Amplifiers, 348 (R.P.)
 — Connections, 628 (R.P.)
 — Energising, 242 (R.P.)
 — Shocks, 99 (B.B.)
 Midget Set, 527 (Illus.)
 Milliammeter, Automatic Self-Adjusting, 39 (Gen.)
 — Connections, 628 (R.P.)
 Moon and Wireless, 300 (R.R.); 480 (Corres.)
 Morals and Wireless, 489 (C.T.)
 Morocco, 85 (C.T.)
 Morris Aural AVC System, 9 (S.P.)
 Morse Learning, 591 (Gen.)
 — Transmission, 311 (C.T.)
 Moscow and Paris, 274 (R.R.)
 Motor Boating (see under TROUBLE, INTERNAL)
 — Generators, 527 (H.T.)
 Moving-coil Headphones, 28 (S.P.)
 Murphy, Lecture, I.E.E., 192 (C.T.)
 Museum Catalogue Review, 13 (Gen.)
 Music from Paper Tape, 310 (S.P.)
 Musical Instruments for Radio, 235 (C.T.)

NEON LAMPS (see under VALVES)
 New Apparatus (see under APPARATUS, COMMERCIAL)
 — Zealand, 259 (C.T.)
 Newfoundland, 241 (B.B.)

Newspapers Control Radio, 274 (R.R.)
 Noise; Science Museum Exhibition, 595 (Gen.)
 Nomenclature 228, 402 (R.R.); 454 (Corres.)
 Non-Resonant Cabinet, 185 (Gen.)
 Normandie Lifeboats, 395 (C.T.)
 — Relay, 489 (C.T.)
 North Middlesex Radio Society, 34 (C.N.)
 — Regional Jamming, 49 (Corres.)
 Northwood Radio and Gramophone Society, 340 (C.N.)
 Norway, 141, 215, 395 (C.T.)
 N.R.E.A., 109, 167, 287, 311, 439 (C.T.)

OIL on Trimmers, 346 (S.P.)
 Old Memories, 124 (R.R.)
 — Wireless Apparatus, 98 (Corres.)
 On the Spot (see under BROADCASTING STATIONS)
 Organ, Electrical, 514 (Gen.)
 Oscillation (see under TROUBLE, INTERNAL)
 Oscillator, Ageing, 406 (R.P.)
 — Frequency Fluctuations, 438 (H.T.)
 Oscillograph, 283 (Appar. Constr.)
 Output Choke Design, 641 (Gen.)
 Overloading Eliminators, 406 (R.P.)

PAPER Rustling by Announcers, 275 (R.R.)
 — Tape Music, 310 (S.P.)
 Parachute Commentary, 167 (C.T.)
 Paris and Moscow, 274 (R.R.)
 Performance Specifications, 561 (Gen.)
 Peru, 85 (C.T.)
 Photoceils (see under VALVES)
 Piezo-Electric Pick Up Construction, 61 (S.P.)
 Pigeons and Wireless, 376 (R.R.)
 Pilot Lamp Problems, 230 (R.P.); 430 (Corres.)
 Pilsudski's Broadcast, 528 (B.B.)
 Plotting Response Curves, 219 (Gen.)
 Poland, 311, 589 (C.T.)
 Police Radio in America, 395 (C.T.)
 — Radio in Manchester, 215 (C.T.)
 Polish Stations, 412 (Gen.)
 Portable Transmitter, German, 49 (S.P.)
 Portables (see under RECEIVERS)
 — and Screening, 622
 Portsmouth Boys' Wireless League, 215 (C.T.)
 Post Office Engineer-in-Chief Dead, 85 (C.T.)
 — Office Monopoly, 555 (Edit.)
 Power Consumption of Receivers, 57 (H.T.); 178 (Corres.); 365 (C.T.)
 — Output and H.T. Voltage, 438 (H.T.)
 — Supply in the Wilds, 164 (Gen.); 229, 276 (Corres.)
 — Wireless, 517 (C.T.)
 Press and Radio Control in U.S.A., 215 (C.T.)
 Programmes and the Press, 240 (R.R.)
 Progress in Wireless Technique, 595 (R.R.)
 Prosecution for Loud Speaker Nuisance, 85 (C.T.)
 Public Address System in Theatres, 150 (Gen.); 276, 431 (Corres.)
 — Supply Mains, 381 (Edit.)
 Push-Pull and H.T. Clicks, 100 (R.P.)
 — Output Stages, 256 (Gen.)
 — Separate Bias, 628 (R.P.)

QUALITY of Reproduction, 1, 51, 77, 157, 605 (Edit.); 48, 49, 72, 98, 155, 200, 276, 353, 502, 577 (Corres.); 85, (C.T.); 110, 126, 446 (Gen.); 149 (B.B.); 500 (R.P.)
 Quartz and Single-Span, 511 (Gen.); 554 (Corres.)
 Q.A.V.C. or Visual Tuning, 85 (S.P.)

RADIO Bandit Alarm, 517 (C.T.)
 — Data Charts (see Abacs.)
 — Dress, 589 (C.T.)
 — INDUSTRY, 28, 76, 127, 159, 160, 204, 225, 252, 272, 284, 326, 355, 387, 456, 506, 521, 534, 571, 600, 617
 — Society of Northern Ireland, 259 (C.T.)
 R.A.F. Vacancies, 287, 541 (C.T.)
 RANDOM RADIATIONS, 66, 90, 124, 143, 176, 195, 228, 239, 274, 300, 330, 352, 376, 401, 431, 453, 468, 502, 515, 550, 574, 594, 622, 649
 Reaction Control, 277 (R.P.)
 READERS' PROBLEMS, 50, 100, 128, 145, 230, 242, 278, 348, 406, 500, 576, 628

Receiver Break-downs, 66 (R.R.)
 — Criticisms, 49 (Corres.)
 — Improvement Suggestions, 531 (Edit.)
 — Reviewed (see under RECEIVERS, COMMERCIAL)
 Reception in Europe, 282 (S.P.)
 — NOTES, 14, 61, 106, 169, 212, 275, 314, 368, 412, 460, 526, 565, 609
 — Reports Wanted, 49 (Corres.)
 Recorded Programmes, 231 (Edit.)
 Recording Programmes on Discs, 612
 Records and Royalties, 67 (R.R.)
 Refrigerators and Photoceils, 637 (C.T.)
 Rejuvenating Bakelite, 143 (R.R.)
 Relays and Flats, 515 (R.R.)
 Resistance-Coupled Amplifiers, 26, 64 (Gen.)
 — Tuning, 138 (Gen.)
 Reverberation in Studios, 130 (Gen.)
 R.L. Antinodal Short-Wave Converter, 88
 Ring, 109 (C.T.)
 R.M.A., 109 (C.T.)
 Roosevelt and American B.B.C., 287 (C.T.)
 — Broadcasts, 63 (C.T.)
 Roumania, 413, 439, 489, 541, 563 (C.T.)
 Royal Society of Arts Essay, 192 (C.T.)
 R.S.G.B., 31, 63, 109, 637 (C.T.); 594 (R.R.)
 Russia, 15, 489, 589 (C.T.)

SAARBRUCKEN Broadcasting, 63 (C.T.)
 Scandinavian Radio, 582 (Gen.)
 School Receivers and Cinemas in France, 15 (C.T.)
 Schottky Effect on Ultra Shorts, 603 (Gen.)
 Screening Restricts Tuning Range, 100 (R.P.)
 Selenophone, 310 (S.P.)
 Self-Capacity Formula for Coils, 340 (Gen.)
 Service After Sales, 176 (R.R.)
 — Engineers Institute, 31 (C.T.)
 Servicing Charges, 439 (C.T.)
 Set Reviews (see under RECEIVERS, COMMERCIAL)
 Sets (see under RECEIVERS)
 Sheet Metal Work, 471 (H.T.)
 Ships Wireless, 559 (Gen.)
 Shocks from D.C. Sets, 128 (R.P.)
 Short Waves (see under SHORT WAVES)
 Sidebands, 413 (C.T.)
 Single Sideband, 495 (Gen.); 554 (Corres.)
 — Span, 48, 49, 98, 155, 176, 200 (Corres.); 50, 406 (R.P.); 174 (Gen.)

For Full Details see under RECEIVERS CONSTRUCTIONAL
 — Span, German, 107 (Rec. Commer.)
 — Span, and Quartz, 511 (Gen.); 554 (Corres.)
 Slade Radio Society, 102, 206, 340 (C.N.)
 Slide Rule for Plotting Curves, 219 (Gen.)
 Smallest Wireless Set, 235 (C.T.)
 Smellievision, 365 (C.T.)
 Smethwick Wireless Society, 206 (C.N.)
 Smoothing (see under TROUBLE, EXTERNAL)
 Sob Stuff Campaign, 31 (C.T.)
 Sound Reinforcement in Theatres, 150 (Gen.); 276, 431 (Corres.)
 — and Vision, 407 (Edit.)
 South Africa and B.B.C., 337 (C.T.)
 Spain, 395 (C.T.)
 Spanish Broadcasting Re-organisation, 192 (C.T.)
 Spectroscope, Acoustic, 467 (Gen.)
 Spelling of Station Names, 407 (Edit.); 431 (R.R.)
 Standard, Frequency Transmissions, 25, 77 (Edit.); 98 (Corres.)
 Static (see under TROUBLE, EXTERNAL)
 Stokowski and High Fidelity, 63 (C.T.)
 Studio in Hollywood, 215 (C.T.)
 Superhet Articles, 170, 394, 438 (H.T.); 174, 213, 236 (Gen.); 178, 276 (Corres.); 230, 406, 500 (R.P.)
 — Reviews (see under RECEIVERS, COMMERCIAL)
 — Selectivity, 500 (R.P.)
 Super-Regenerative Receivers, 585 (Gen.)
 Sweden, 85, 167, 215, 463 (C.T.)
 Swedish Koyal Broadcast Thwarted, 287 (C.T.)
 Switzerland, 63, 141, 235 (C.T.)
 Synchronous Motors, 367 (Gen.)

T.A.T. Circuit Revived, 52 (Gen.); 145 (R.P.)
 Taxi Radio, 215, 563 (C.T.); 594 (S.P.)
 Television (see under TELEVISION)
 Testing Components, 471 (H.T.)
 — Without Equipment, 232 (Gen.)

Thames Valley Amateur Radio and Television Society, 34 (C.N.)
 340 (C.N.); 517 (C.T.)
 Theatres and Broadcasting, 439 (C.T.)
 Tired Transmitters, 143 (R.R.); 436 (Corres.)
 Titanic and Macon, 228 (R.R.)
 Tone-Compensated Volume Control, 161, 273 (Gen.)
 — Control, 527 (H.T.)
 — Control Transformer, 437 (Gen.)
 — Correction, 145 (R.P.)
 — Correction by Volume Expansion, 461 (Gen.)
 Transformer, Aerial, 617 (Gen.)
 — Design, 606 (Gen.)
 — Ratio, 170 (H.T.)
 Transmission-Line Fidelity, 542 (Gen.)
 Transmitters (see Amateur Transmitters)
 — Tired, 143 (R.R.); 436 (Corres.)
 Trimmers, Oil on, 346 (S.P.)
 Trimming, 12, 527 (H.T.)
 Tuning Coils, 58 (Gen.)
 — Dial, French, 62 (Illus.)
 — Dials, 196 (R.R.)
 — Meter and Diodes, 406 (R.P.)
 — Range Restricted by Screening, 100 (R.P.)
 — Scale, New, by B.T.H., 74 (S.P.)
 Turkish Broadcasting, 69 (L.G.)
 Twenty Five Valve Set, 235 (C.T.)
 — Years Ago, 151, 250, 364

U.I.R., 179 (B.B.); 235, 250, 541 (C.T.)
 Ultra Factory, 649 (R.R.)
 UNBIASED, 18, 42, 84, 140, 166, 216, 263, 294, 321, 335, 366, 392, 424, 450, 470, 492, 516, 552, 568, 590, 616, 640; 378 (Corres.)

VALVES. (See under VALVES)
 Variable Selectivity, 128 (R.P.)
 Vibratory H.T. Generators, 500 (R.P.)
 Vienna, 637 (C.T.)
 Voices Competition in Paris, 15 (C.T.)
 Voltage Decoupling, 278 (R.P.)
 — Measurement by Condenser, 471 (H.T.)
 Voltmeter Scales, 628 (R.P.)
 Volume Control, 576 (R.P.)
 — Control at the Loud Speaker, 315 (Gen.)
 — Control with Tone Compensator, 161, 273 (Gen.)
 — Expansion, 461 (Gen.); 604 (Corres.)

WAR and Radio, 395 (C.T.)
 Warsaw, 109 (C.T.)
 Wave Changing, 170 (H.T.)
 — Distortion in Receivers, 362, 396 (Gen.)
 — Traps, 285 (Gen.); 348 (R.P.)
 Waveband Allocation, 1, 51, 77 (Edit.); 72, 98, 155, 276, 353 (Corres.); 85 (C.T.)
 Weatherproof Microphone, 217 (Illus.)
 Weddings by Wireless, 259 (C.T.)
 Whistles (see under TROUBLE)
 Wide Frequency Cable 149, 201 (B.B.)
 Wider Frequency Band, 1, 51, 77 (Edit.); 72, 98, 155, 276, 353 (Corres.); 85 (C.T.)
 Wired Wireless, 576 (R.P.)
WIRELESS AND THE ATMOSPHERE:
 — I. Nature and Cause of Atmospheric Electricity, 434 (Gen.)
 — II. The Stratosphere, The World of Fair Weather and Intense Sunshine, 464 (Gen.)
 — III. The Ozone Layer, and its Protective Action, 518 (Gen.)
 — IV. The Ionosphere, the Home of the Heavieside and the Appleton Layers, 538
 — V. Absorption of Wireless Waves and Wireless Echoes, 572
 — Operators Jobs, 167 (C.T.)
 — Pilots for Aeroplanes, 650 (R.R.)
 — Seasons, 650 (R.R.)
 — Private Communication, for, 555 (Edit.)
 — Signals, R.E., 31 (C.T.)
 — in the Wilds, 164 (Gen.); 229, 276 (Corres.)
 — World Receiver Reports Wanted, 49 (Corres.)
 Woman Announcers, 15 (C.T.)
 — Broadcast Engineer, 540 (S.P.)
 — Officials in Continental Stations, 615 (C.T.)
 — Organists, 543 (B.B.)
 World Radio, 311 (C.T.)

YOUNGEST Wireless Operator, 365 (C.T.)

CLASSIFIED INDEX

APPARATUS (Commercial)

(For Receivers, Loud Speakers and Valves, see under respective headings)

A.E.F. Mfg. Co. Portable Receiver Batteries, 497
 American Microphone Exhibit, 413 (Illus.)
 Amplion Fuses, 553
 — Resistors, 88
 — Type TB Condenser, 197
 Avo Testing Accessories, 404
 Baldwin Micro-Henlog Inductance Bridge, 20
 Battery, Gordon Magnesium, 493
 Belling-Lee Flex-Lead Suppressor, 553
 — Screened Valve Connector, 476
 — Rejactostat, 426
 Birmingham Sound Reproducers (B.S.R.) Heavy Duty Output Transformer, 38
 Bone Oscillator, 337 (C.T.)
 Brown Droitwich Filters, 88
 — Multi-Wave Tuner, 319
 British Television Supplies, Ltd., Droitwich Coils, 20
 — Television Supplies, Ltd., Modulated Test Oscillator Coils, 475
 — Television Supplies, Ltd., Short Wave Coils, 600
 Brush Components (see Rothermel)
 Bryce Connectors, 197
 B.T.H. 16 mm. Home Talkie, 36
 — Tuning Scale Patent, 74
 — Truspeed D.C. Motor, 272

Bulgin Components, 197
 — Group Resistor Board, 38
 — Interference Suppressor Model A49, 432
 — Interference Suppressor, Model P50, 127
 — Mains Resistances, 272, 349
 — Valve Connectors, 600
 C.A.C. A.C. Short Wave Converter Chassis, 432
 — Q.A. Coils, 184
 Cambridge Scientific Instrument Co.'s Cardiograph, 480 (Corres.)
 Cardiograph, 388 (Gen.); 480, 577, 652 (Corres.)
 Clix Air-Sprung Valve Holders, 349
 — Specialties, 524
 Concordia R.W. Aerial, 272
 Conradty Semper Idem Resistances, 600
 Cossor Portable Mains Oscillograph, 80 (S.P.)
 — Tuning Scale, 330 (Illus.)
 — Robertson Cardiograph, 388 (Gen.); 480, 577, 652 (Corres.)
 Deaf, Moving-coil Headphones for, 28 (S.P.)
 Düblier Oil-immersed Condensers, 70
 Eclipse Saw Setting Tool, 569
 Ediswan MU2 Rectifier, 569
 Eddystone All-Wave H.F. Choke, 197
 — Glass Lead-in, 471 (Illus.)
 — S.W. Wavemeter, 524
 Ekco Power Output Meter, 614
 Epoch Microphone, 70
 Ever Ready 6s. H.T. Battery, 30; 67 (R.R.)

Exide Accumulator, 88
 Ferranti Droitwich Rejector, 24
 — Mains Transformer, 70
 — Self-Starting Synchronous Time Motor, 295
 Forrest Dual Wave Repressor, 476, 600
 Formo Dual-Ratio "Snail" Drive Dial, 524
 Fox Amplifier, 349; 404 (Correction)
 Franks Microphone, 218
 German Portable Transmitter, 49 (S.P.)
 Goltone Fuse Plug, 476
 — Nodalizer, 295
 Gordon Magnesium Battery, 493
 Graham-Farish Mains Suppressor, 197
 — Terminal Bracket, 569
 Hammarlund Components (see Rothermel)
 Hermes Transceiver, 402; 611 (S.P.)
 Hinderlich Farts for Transverse Current Microphone, 349
 Iron-Cored Coil Innovation in Germany, 341 (Gen.)
 Jack's Test-All Meter, 646
 K-B Short-Wave Converter, 553
 London Radio Development Co. Q.A. Receiver Coils, 521
 — Transformer Products Mains Transformer for Quality Amplifier, 432

Lyons A.C. Motor Starting Switches, 218
 — Stackpole Potentiometers (see under Morganite-Stackpole)
 Lystan Chassis Cradle, 646

Magnum Switches, 148, 404
 Morganite-Stackpole Potentiometers, 127
 Morleys Short Wave Coils, 121
 Morris Aural A.V.C. System, 9
 Moving-coil Headphones, 28 (S.P.)

Pertrix 60-volt H.T. Battery, 148
 Peto Scott Q.A. Receiver chassis, 284
 Philco Shadow Tuning Meter, 38
 Piezo-Electric Pick Up Construction, 61 (S.P.)
 Pifco Rotameter, 218
 Polar-N.S.F. Condensers, 349
 Polchar's Regular Earth Tube, 127
 Portable Transmitter for Reporters, 241 (Illus.)
 Pye and Screened Cables, 519

Q.A. Receiver Coils, 184, 258

Radiolab Test Apparatus, 295
 Raymart Short-Wave Components, 148
 R.C. and S. Static Suppressor, 272
 Reliance Potentiometers, 620
 R.G.D. Microphone Amplifier, 466
 R.I. Antinodal Short-wave Converter, 88
 Rothermel All-Wave Aerial, 640
 — Hammarlund I.F. Transformer, 620
 — Brush Microphone, 614
 — Brush Piezo-Electric Microphones, 562
 — Wind-driven Generators, 314 (S.P.)

Santon Three-Pin Multi-Plugs, 569
 Savage Push-Pull Components, 404
 Scientific Supply Stores Coils for S.W. Converter, 476
 — Supply Stores Mono-Planar Baffle, 453 (S.P.)
 Selenophone Recorder, 310 (S.P.)
 Sound Sales 30-watt Amplifier, 627
 Standard Telephones and Cables Cathode Ray Oscillograph Unit 56 (Illus.), 70 (S.P.)
 Sunbeam H.T. Battery, 432

T.C.C. Condensers, 476
 Tuning Dial, French, 62 (Illus.)

Van Rood Conversion Tables, 497

Wearite Coils for A.C. Short Wave Converter, 524
 — Short Wave Components, 218
 — Tone Compensating Choke, 404
 — Wave-Trap Coil, 295
 Whiteley Electrical Droitwich Rejector, 24
 Wind-Driven Generators, 314 (S.P.)

APPARATUS (Constructional)

(For complete Receivers, see under RECEIVERS CONSTRUCTIONAL)

Abac Calculator, 385 (Illus.)

Chokes, H.F., 486, 529

40 Metre Transmitter, 210, 266

H.F. Chokes, 486, 529

Microphone, Transverse Current, 29
 — Hinderlich Parts, 349 (Appar. Commer.)
 Modulated Test Oscillator, 458, 482
 — British Television Supplies, Ltd. Coils, 475 (Appar. Commer.)
 Oscillator, Modulated Test, 458, 482
 — British Television Supplies, Ltd. Coils, 475 (Appar. Commer.)
 Oscillograph, 283

Push-Pull Quality Amplifier and Q.A. Receiver, 110, 134, 158, 188; 230, 406 (R.P.); 502, 604, 627 (Corres.)
 — C.A.C. Coils, 184 (Appar. Commer.)
 — Coils, 258 (Appar. Commer.)
 — London Radio Development Co. Coils, 521 (Appar. Commer.)
 — London Transformer Products Mains Transformer, 432 (Appar. Commer.)
 — Peto Scott Chassis, 284 (Appar. Commer.)
 — Ward, C. F. Model, 315 (Rec. Commer.)

Quality Amplifier, Push-Pull (see Push-Pull)

Short Wave Converter, 358, 382
 — 447 (Test Report)
 — Scientific Supply Stores Coils, 476 (Appar. Commer.)
 — C.A.C. Chassis, 432 (Appar. Commer.)
 — Wearite Coils, 524 (Appar. Commer.)

Thyratron Inverter, 535; 646 (Correction)
 Transmitter for 40 meters, 210, 260

BOOKS

Broadcaster Radio and Gramophone Trade Annual, 87
 Definitions and Formulæ for Students, 412
 Elements of Loud Speaker Practice, 460
 Fernseh Empfang, 416
 Glorious Adventure at Home, 646
 Gramophone Record, The, 361
 Grundriss der Kurzwellentherapie, 262
 Introduction to Engineering, 5
 Kempe's Engineer's Year-Book, 364

Modern Radio Communication, 310
 N.P.L. Report, 580
 Noise, 595

Photo-electric Cells, 22
 — Cell Applications, 204
 Problems in Radio Engineering, 310

Radio Amateurs' Handbook, 289

Science Museum Handbook, 13
 Short-Wave Therapy, 262
 Superheterodyne Receiver, 204

BROADCASTING STATIONS

Berlin, 311 (C.T.)
 Brasov, 235, 589 (C.T.)
 Bretagne, 141 (C.T.)
 Brno, 463 (C.T.)
 Brussels, 365 (C.T.)
 Budapest, 109 (C.T.)
 — High Power, 551 (Gen.)

Central American S.W., 575 (Gen.)

Droitwich, 19, 71, 113, 179, 201, 589 (B.B.); 143, 330, 401 (R.R.); 155 (Corres.)

Fecamp, 413 (C.T.)

Heilsburg, 141 (C.T.)
 Helsinki, 91 (Gen.)
 Hilversum, 337 (C.T.)
 Huizen, 2 (Gen.)
 Hungarian, S.W., 15 (C.T.)

Jewish Station, 287 (C.T.)

Lahti, 167 (C.T.)
 Leipzig, 563 (C.T.)
 Lisbon, 311 (C.T.)
 Little Nationals, 543 (B.B.)
 London National, 401 (R.R.)

Mexico, 439 (C.T.)
 Midland Regional, 37, 113, 149, 179, 217, 327 (B.B.); 200, 276, 354 (Corres.)
 Moravska-Ostrava, 413 (C.T.)
 Moscow, 141 (C.T.)
 — S.W., 311 (C.T.)

North National, 401 (R.R.)
 North Scottish Regional, 99 (B.B.)

Parede, 192 (C.T.)
 Paris, Eiffel Tower, 311, 395, 413 (C.T.)
 — P.T.T., 563 (C.T.)
 — Radio Paris, 235 (C.T.)

Radio-Bretagne, 141 (C.T.)
 — Nations, 259 (C.T.)
 — Romania, 551 (Gen.)
 — Suisse-Romande, 141 (C.T.)
 Rennes, 439 (C.T.)
 Rome, 141, 541 (C.T.)

Schenectady, 395 (C.T.)
 Skamleback, S.W., 125 (S.P.)
 Sottens, 541 (C.T.)
 South America, S.W., 379 (Gen.)
 Stuttgart, 439 (C.T.)

Warsaw, 541 (S.P.)
 — New High Power Station, 412 (Gen.)
 Wavelength Changes, 113 (B.B.)
 Western National, 401 (R.R.)

LOUD SPEAKERS

Baffles with Tweeters, 57 (H.T.)
 Baker's Home Constructors Loud Speaker, 20
 Burglar's Surprise, 229 (R.R.)
 Bylaw Against Loud Speakers, 167 (C.T.)

Elements of Loud Speaker Practice, 460 (Books)
 Excessive Energising Current, 170 (H.T.)
 Extensions, Internal Connections of Terminals, 49 (Corres.)

Field Winding Leakage, 278 (R.P.)

Goodmans Energised Loud Speaker, 127

High Note Diffuser, 185 (Gen.)

Körting Non-Directional Loud Speaker, 315 (Illus.)

Load Diagrams, 324, 344 (Gen.)
 Lodge's Original Loud Speaker, 312 (Illus.)

Marconiphone Loud Speaker, 177 (S.P.)

Non-Resonant Cabinet, 185 (Gen.)
 Nuvoion 50 Watt Instrument Demonstrated, 167 (C.T.)

Permanent Magnet Industry in Sheffield, 312, 414, 634 (Gen.)

Rothermel Tweeter Kit, 70

Scientific Supply Stores Mono-Planar Baffle, 453 (S.P.)

Tweeters, 500 (R.P.)
 — and Battery Receivers, 242 (R.P.)

Volume Control, 315 (Gen.)

Wireless World Measurements and Curves, 279, 305 (Edit.): 306, 316 (Gen.): 353, 378, 454 (Corres.)

RECEIVERS (Commercial)

Austin Car Radio Set, 44 (S.P.)
 Bush, Model SB, 4v. Bat. Superhet, 133 (S.P.)

C.A.C. Austin Car Radio, 163 (S.P.)
 — Receivers and School Broadcasts, 569 (S.P.)
 Climax, Model 534, 4v. A.C. Superhet, 475
 Cossor, Model 369, A.C./D.C. 3v. Straight, 151 (S.P.)
 — Model 535, 4v. A.C. Superhet, 94

Designing Receivers, 78, 114 (Gen.)
 Drummer, Model M65, 4v. A.C. All Wave Superhet, 43

Ekco, Model AD36, 267 (S.P.)
 Ever Ready A.C. Superhet, 137 (S.P.)
 — Ready Bat. Superhet, 137 (S.P.)

Ferranti Arcadia 4v. A.C. Superhet, 168
 — Universal, A.C./D.C. 4v. Superhet, 425

G.E.C. Droitwich Super 5, 125 (S.P.)
 — Overseas, B7, 7v. Bat. Superhet, 426 (S.P.)
 — Radiogram, 5v. A.C. Superhet, 245 (S.P.)
 German Receivers for the New Year, 171 (Gen.)

H.M.V., Console Model, 112 (S.P.)
 — High Fidelity Autoradiogram Model 800, 13v. A.C. Superhet, 222
 — Model 340, 3v. A.C./D.C. Superhet, 426 (Illus.); 496
 — Radiogram, 112 (S.P.)
 — Table Model 441, 112 (S.P.)
 Halcyon AC7, 4v. A.C. Superhet, 598
 Hermes Transreceiver, 402; 611 (S.P.)

Invisitone Table Receiver, 178 (S.P.)

Lampex Superhet Four, 106 (S.P.)
 — Superhet Four Radiogram, 106 (S.P.)
 Lotus, Model 66, 3v. A.C./D.C. Straight, 520

McMichael, Model 135, 4v. A.C. Superhet, 544
 Marconiphone, Console, Model 287, 116 (S.P.)
 — Model 223, 3v. A.C./D.C. Superhet, 437 (S.P.)
 — Radiogram, Model 292, 8v. A.C. Superhet, 16
 — Radiogram, Model 297, 116 (S.P.)
 — Table Model 264, 116 (S.P.)
 Murphy 1935 Programme, 38 (S.P.)
 — Radiogramphone, Model A24RG, 4v. A.C. Superhet, 120
 — "26" Series, 339 (S.P.)
 — Table Model A26, 4v. A.C. Superhet, 400

Orr Radio, Invicta, 4v. A.V.C. Superhet, 128 (S.P.)

Pye, Model TP/B, 5v. Bat. Superhet, 638
 — SE/AC, 4v. A.C. Superhet, 370

R.I. Airflo, D.C. Receiver, 54 (S.P.)
 — Ritz, Airflo, 4v. A.C. Superhet, 144

Single Span German Receiver, 107 (Gen.)
 Sunbeam, Model 57, Universal, 22 (S.P.)
 Superheterodyne Receiver, 204 (Books)

Ward's Q.A. Receiver, 315 (S.P.)
 Wurlitzer-Lyric, Model 471B, 6v. A.C. All-Wave Superhet, 570

RECEIVERS (Constructional)

Designing Receivers, 78 (Gen.); 468 (R.R.)

Five-Metre Super-Regenerative Receiver, 490

Monodial, 178, 276, 354 (Corres.)

Permeability Battery Four, 508, 532

QA Receiver and Push-Pull Quality Amplifier, 110, 134, 158, 188; 230, 406 (R.P.); 502, 604, 627 (Corres.)
 — Receiver, C.A.C. Coils, 184 (Appar. Commer.)
 — Receiver, Coils, 258 (Appar. Commer.)
 — Receiver, London Radio Development Co. Coils, 521 (Appar. Commer.)
 — Receiver, London Transformer Products Mains Transformer, 432 (Appar. Commer.)
 — Receiver, Peto-Scott Chassis, 284 (Appar. Commer.)
 — Receiver, Ward, C. F. Model, 315 (Rec. Commer.)

Short-Wave Converter, 358, 382, 447 (Test Report)
 — Scientific Supply Stores Coils, 476 (Appar. Commer.)
 — C.A.C. Chassis, 432

Single Span, 48, 49, 98, 155 (Corres.)
 — Frequency Transformation, 174 (Gen.)
 — Olympic S-S Six, 178 (Corres.)
 — New Filter, 406 (R.P.)
 Super-Regenerative Receivers, 585 (Gen.)

Ultra-Short Wave Receiver, 556

SHORT WAVES

Aberdeen Club, 141 (C.T.)
 A.C. Converter, 357 (Edit.); 358, 382 (Appar. Constr.); 447 (Test Report)
 — Scientific Supply Stores Coils, 476 (Appar. Commer.)
 — C.A.C. Chassis, 432 (Appar. Commer.)
 — Wearite Coils, 524 (Appar. Commer.)
 Amateur Direction Finding, 623 (S.P.)
 — and Short Waves, 45, 75, 89, 286, 326, 469 (Gen.)
 Amateurs and 80 Metres, 637 (C.T.)
 — and the Ultra-Shorts, 235 (C.T.)
 American Aeroplane Wavelengths, 15 (C.T.)
 — Pirates, 463 (C.T.)
 A.R.R.L. Report on Ultra-Shorts, 311 (C.T.)

Background Noise Reduction on Ultra-Shorts, 603 (Gen.)
 Band Spread Tuning, 595 (R.R.)
 Berlin Power Increase, 15 (C.T.)
 — Station Moved, 259 (C.T.)
 Birmingham 5-metre Tests, 541 (C.T.)
 Boom Anticipated, 196 (R.R.)
 British Television Supplies, Ltd., Coils, 600 (Appar. Commer.)
 Broadcasting Service Proposed, 507 (Edit.)

Cars and Interference, 515 (R.R.)
 Central American Stations, 575 (Gen.)
 Chinese Government Contracts, 287 (C.T.)

Danish National Transmitter, 125 (S.P.)
 Daventry Improvements, 501 (B.B.)
 Diode-Triode Heptode Frequency Changer, 213 (Gen.)
 Dipoles for American Cavalry, 489 (C.T.)
 Doctor of Short Waves, 541 (C.T.)
 Eddystone Transmitter, 589 (C.T.)
 — Wave Meter, 524 (Appar. Commer.)
 Empire Programmes, 405 (B.B.)
 Five-Metre Super-Regenerative Receiver, 490 (Rec. Constr.)
 40-Metre Transmitter, 210, 260 (Constr.)
 French Colonial Broadcasts, 15 (C.T.)
 Frequency Modulation on Ultra-Shorts, 603 (Gen.)
 Future of Ultra-Shorts, 176 (R.R.)
 German Service, 401 (R.R.)
 Germany Broadcasts in English, 449 (B.B.)
 Grundriss der Kuzwellentherapie, 262 (Books)
 Hammarlund Components (see Rothermel)
 Headphone Receiver, 278 (R.P.)
 Hermes Transceiver, 402 (Rec. Commer.); 611 (S.P.)
 Hungarian Station Opened, 15 (C.T.)
 I.D.A., 395, 541 (C.T.)
 Interference by Other Stations, 481 (Edit.); 604 (Corres.)
 Irish Society Formed, 259 (C.T.)
 I.S.W.C., 192, 287, 439, 463, 489, 517 (C.T.); 340 (C.N.)
 K-B Converter, 553 (Appar. Commer.)
 Lecture via Ultra-Short-Waves, 109 (Illus.)
 Leicester Amateur Exhibition, 311 (C.T.)
 Lisbon Station, 311 (C.T.)
 London-Birmingham Experiments, 489, 517 (C.T.)
 Manchester Short-Wave Club, 102 (C.N.)
 Manure Superseded by Ultra-Short Waves, 109 (C.T.)
 Medical Uses and Interference, 515 (R.R.)
 Mexico Starts, 439 (C.T.)
 Morleys' Coils, 121 (Appar. Commer.)
 New Types of Tuned Circuits, 290 (Gen.)
 — Valves, 537
 — York Lecture by Ultra-Shorts, 109 (C.T.)
 News Services, 623 (R.R.)
 Paris Short-Wave Exhibition, 85 (C.T.)
 Philips Transmitter at Eindhoven, 589 (C.T.)
 Radio Amateurs' Handbook, 289
 Raymart Components, 148 (Appar. Commer.)
 R. I. Antinodal Short-Wave Converter, 88
 Rothermel-Hammarlund Components, 553 (Appar. Commer.)
 Short-Wave Therapy, 262 (Books)
 Snowden Ultra-Short Wave Tests, 589 (C.T.)
 South American Stations, 379 (Gen.)
 Stratton's Transmitter, 588 (Illus.)
 Telefunken Receiver, 155, 167, 282 (Illus.)
 Telefunken Transmitter at Nagoya, 364 (Illus.)
 Television Adaptors, 236 (Gen.)
 Two-Channel Reception, 503 (R.R.)
 2½ or 5 Metres? 167 (C.T.)
 Ultra-Short-Wave Circuits, 621
 — Short-Wave D.F. Beacons, 85 (C.T.)
 — Short-Waves on Ben Lomond, 488 (S.P.)
 — Short-Waves, Experimental Facilities Demanded, 381 (Edit.)
 — Short-Waves and Extra Range, 574 (R.R.)
 — Short-Wave Field Days, 615 (C.T.)
 — Short-Wave Reception, 556 (Rec. Constr.)
 — Short-Waves and Skip Distance, 515 (R.R.)
 — Short-Waves from Snowdon, 637 (C.T.)
 — Short-Wave Transmissions, 615 (C.T.)
 Vatican Range, 637 (C.T.)
 Wavelength Plan Proposed, 179 (B.B.)
 Wearite Components, 218 (Appar. Commer.)
 WEEKLY NOTES, 76, 124, 177, 240, 301, 364, 387, 448, 491, 545, 584, 643
 Wide Frequency Cable for Quality, 149 (B.B.)
 World Radio Research League, 167 (C.T.)

TELEVISION

Advisory Committee, 217 (B.B.)
 Alexandra Palace, 592 (Gen.); 622 (R.R.)
 Alternative Suggestions, 72 (Corres.)
 American Television, 258 (S.P.)
 — Tests, 513 (Gen.)
 Anglo-American Radio and Television Society, 31 (C.T.)
 Baird Company's Grievance, 629 (Edit.)
 — and E.M.I. Systems, 623 (R.R.)
 — High Definition Demonstration, 195 (R.R.)
 B.B.C. Adjustment Signals, 77 (Edit.)
 — Chief, 179 (B.B.)
 — Director, 477 (B.B.)
 — Film Tests, 99 (B.B.)
 — Financial Aid, 327, 347 (B.B.); 331 (Edit.)
 — and I.T.C., 395 (C.T.)
 — Nomenclature, 352 (R.R.)
 — Scanning Apparatus, 137 (Illus.)
 — 30-line Programme, 405 (B.B.)
 Berlin 180-line Image, 577 (Illus.)
 — Reception Rooms, 463 (C.T.)
 — Starts, 352 (R.R.)
 Booklet, 231 (Edit.)
 Cars and Interference, 515 (R.R.)
 Cathode, Ltd., 31 (C.T.)
 Cathode Ray Scanning Explained, 182, 208 (Gen.)
 Censorship, 330 (R.R.)
 Cinema Equipped, 235 (C.T.)
 Cinematograph Institute Takes Action, 215 (C.T.)
 Colour Transmissions, 615 (C.T.)
 Components and Accessories Review, 243 (Gen.)
 Convertible Receivers, 279 (Edit.)
 Cossor Cathode Ray Tube, 506 (Appar. Commer.)
 Covent Garden Incident, 501 (B.B.)

Daily Telegraph Installation, 167 (C.T.)
 Danish Disbelief, 15 (C.T.)
 — and Swiss Views, 365 (C.T.)
 Deaf and Dumb Licences, 259 (C.T.)
 Development Prophecies, 86 (Gen.)
 Distortion of Image, 254 (Gen.)
 Dud Receivers, 352 (R.R.)
 Eiffel Tower Transmitter, 376 (R.R.); 439 (C.T.)
 Ekco and Scophony, 365 (C.T.)
 Engineer Electrocutted, 215 (C.T.)
 Equality of Opportunity for Manufacturers, 305 (Edit.) • 378 (Corres.)
 Experimental Facilities Demanded, 381 (Edit.)
 — or Permanent Service, 605 (Edit.)
 Fernseh Empfang, 416 (Books)
 — Television Theatre, 200 (Illus.)
 Fluorescent Screens, 599 (S.P.)
 405-lines, 541 (C.T.)
 French Manufacturers Announcement, 337 (C.T.)
 — Studio, 167 (Illus.)
 — System, 235 (C.T.)
 — Troubles, 517 (C.T.)
 German Article Censorship, 463 (C.T.)
 — Film-Cutting Table, 337 (Illus.)
 — High Definition Begins, 288 (Gen.); 300 (R.R.)
 — Map, 525 (Illus.)
 — Public Demonstration, 507 (Edit.)
 — Reporter's Van, 239 (Illus.)
 — Rivalry, 517 (C.T.)
 — Tests, 235 (C.T.)
 Germany's First Congress, 563 (C.T.)
 — Mobile Unit, 637 (S.P.)
 Greater Definition on Medium Waves, 117 (Gen.)
 High Definition Begins in Germany, 288 (Gen.); 300 (R.R.)
 Iconoscope, 208 (Gen.)
 I.F. Amplifier Design, 586 (Gen.)
 Journalistic Blunders, 402, 431 (R.R.)
 Jubilee Programmes, 449 (B.B.)
 L.F. Amplifiers, 417, 444 (Gen.)
 Loewe Cathode Ray Receiver, 376 (Illus.)
 London Station Centre, 365 (C.T.)
 Map, German, 525 (Illus.)
 — of London, 187 (Illus.)
 National Plans for Germany, 525 (Gen.)
 New Control Technique Wanted, 408 (Edit.)
 News Theatre, 287 (C.T.)
 Nomenclature, 149, 427 (B.B.); 287 (C.T.)
 Olympia Plans, 489 (C.T.); 502 (R.R.)
 Paris Fashion Parade, 563 (C.T.)
 Paris Tests, 259 (C.T.)
 Philips Transmitter at Eindhoven, 589 (C.T.)
 Phonovision, 463 (S.P.)
 Photo-electric Cell Application, 204 (Books)
 — electric Cells, 22 (Books)
 P.M.G. Committee Report, 66, 90, 124 (R.R.); 99, 149, (B.B.); 109, 129 (Edit.); 142 (Gen.); 176 (Illus.); 192 (C.T.)
 Polytechnic Lectures, 413 (C.T.)
 Price of Sets, 141 (C.T.)
 Progress in Germany, 416 (Books)
 Public Demonstrations in Germany, 507 (Edit.)
 Raster Trimming, 485 (S.P.)
 Reyners Demonstration, 541 (Illus.)
 Robb, Eustace, 149 (B.B.)
 Scanning, 116 (Gen.)
 — Apparatus at Broadcasting House, 137 (Illus.)
 Scophony and Ekco, 365 (C.T.)
 Short Wave Converters, 236 (Gen.)
 Sight and Sound on Same Wavelength, 615 (C.T.)
 Site of First London Station, 176 (R.R.); 186 (Gen.); 234 (S.P.); 277 (B.B.)
 — Seeking, 515 (R.R.)
 Standardisation Wanted, 229, 304 (Corres.)
 Still or Moving Pictures, 259 (C.T.)
 Suitable Circuits, 621 (Gen.)
 Telefunken Receiver, 155, 167, 282 (Illus.)
 Thames Valley Amateur Radio and Television Society, 34 (C.N.)
 30-line to Continue, 149 (B.B.)
 Vision and Visionless Technique, 207 (Edit.)
 Wavelengths and Aircrafts (Times Extract), 225 (S.P.)
 — of Sound Accompaniment, 181 (Edit.)
 Wide Frequency Cable for Quality, 149, 201 (B.B.)

TROUBLE (External Interference)

Acoustic Insulation of Houses, 630 (Gen.)
 Belling-Lee Suppressor, 553 (Appar. Commer.)
 Boiling Water Noises, 178, 229 (Corres.)
 British Standards Institution Anti-Static Stamp, 37 (B.B.)
 Bulgin Interference Suppressors, 127, 432 (Appar. Commer.)
 Bylaw Against Loud Speakers, 167 (C.T.)
 Canadian Anti-Interference Measures, 463 (C.T.)
 Cars and Interference, 515 (R.R.)
 Cheap Interference Suppressors, 575 (R.R.)
 Correct Connections of Condensers in Suppressors, 628 (R.P.)
 Diesel Engine Interference, 628 (R.P.)
 Dutch Anti-Interference Laws, 43 (C.T.)
 Eiffel Tower Interference, 259 (C.T.)
 Fading and Distortion, 304 (Corres.)
 Filters on Mains, 12 (H.T.)
 French Anti-Interference Campaign, 215, 287, 413, 517, 541, 637 (C.T.); 274 (R.R.)

G.P.O. Attitude, 274 (R.R.)
 German Anti-Interference Campaign, 37 (B.B.); 167 (C.T.)
 438 (Illus.)
 Graham-Farish Suppressor, 197 (Appar. Commer.)
 Heterodyne Whistles, 145 (R.P.)
 — Interference, 242 (R.P.)
 Hum from Aerial, 50 (R.P.)
 I.E.E. Committee's Incompetence, 253 (Edit.)
 Jubilee Illumination Interference, 427 (B.B.); 431 (R.R.)
 Legislation Wanted, 90 (R.R.)
 Loud Speaker Annoyances, 630 (Gen.)
 Luxembourg Effect on B.E.C. Stations, 304 (Corres.)
 Medical Apparatus and Interference, 515 (R.R.)
 Noise Suppressors, 104 (Gen.); 200 (Corres.)
 Paris Anti-Loud Speaker Noise Laws, 311 (C.T.)
 Post Office Questionnaire, 293 (B.B.)
 Q.P.P. and H.T., 419 (H.T.)
 R.C. and S. Suppressor, 272 (Appar. Commer.)
 R.M.A. Anti-Interference Committee, 287 (C.T.)
 Receiver Design and Interference, 471 (H.T.)
 Screen Download Difficulties, 406 (R.P.)
 Short-Circuited Interference Suppressor, 576 (R.P.)
 — Wave Interference, 481 (Edit.), 604 (Corres.)
 Swedish Anti-Interference Conference, 287 (C.T.)
 — Anti-Interference Views, 365 (C.T.)
 Television Distortion Due to Electrical Interference, 254 (Gen.)
 Trolley Bus Troubles, 31, 141, 365, 615 (C.T.); 67 (R.R.)
 241 (B.B.)
 Tweeters and Interference, 348 (R.P.)

TROUBLE (Internal)

Aerials and Stability, 471 (H.T.)
 Back Coupling by Resistance, 57 (H.T.)
 Background Noises and Weak Superhet Oscillations, 394 (H.T.)
 Cabinet Vibrations, 419 (H.T.)
 Choke Decoupling, 242 (R.P.)
 Condenser Connections, 50 (R.P.)
 Hum and Frequency Response, 242 (R.P.)
 Instability and Amplification, 348 (R.P.)
 Intermediate Frequency Interference, 500 (R.P.)
 Oscillation, Insufficient Amplitude, 394 (H.T.)
 Paper Condenser Losses, 419 (H.T.)
 Poltergeist, 35 (Gen.)
 Resistance Trouble, 379 (H.T.)
 Television Distortion, 254 (Gen.)
 Testing with a Milliammeter, 348 (R.P.)
 — Risks, 379 (H.T.)
 Volume Control and Anode Current, 348 (R.P.)
 — Control and Stability, 394 (H.T.)
 Wave Distortion in Receivers, 362, 396 (Gen.)

VALVES

Biasing in R.C. Amplifiers, 145 (R.P.)
 Breakdown Causes, 240 (R.R.)
 Cathode Ray, 320, 336 (Gen.)
 — Ray Cardiograph, 388 (Gen.); 480, 577, 652 (Corres.)
 — Ray Oscilloscope, 283 (Appar. Constr.)
 — Ray Troubles, 475 (S.P.)
 — Ray Tubes, 55 (Gen.)
 — Ray Uses, 4, 32 (Gen.)
 Cold Cathode Valve, 95 (S.P.)
 Cossor Cathode Ray Tubes, 506 (Gen.); 637 (C.T.)
 Detector as Radio Frequency Load, 193 (Gen.)
 Diodes and Reaction, 230 (R.P.)
 Ediswan E.S.75 Modification, 76 (S.P.)
 Filament Connections, 50 (R.P.)
 Fluorescent Screens for Cathode Ray Tubes, 599 (S.P.)
 Heater Phenomenon, 230 (R.P.)
 Hivac Midget Valves, 289 (S.P.)
 Loud Speaker Load Designs, 324, 344 (Gen.)
 Marconi-Osram Duo-Diode Output Pentode, 371 (S.P.)
 — -Osram N.41: 196 (R.R.); 229 (S.P.)
 — -Osram Triode-Hexode and Duo-Diode, 537 (Gen.)
 Metal American Products, 393 (Gen.)
 Metallising Troubles, 128 (R.P.)
 Miniature Acorns, 177 (R.R.)
 Miscellaneous Uses, 124 (R.R.)
 Mixed Types in Receivers, 242 (R.P.)
 Mullard Output Pen 4V.B., 126 (S.P.)
 — Transmitting Valves, 250 (S.P.)
 — Valve Caps, 102 (S.P.)
 New Diode, 593 (Gen.)
 Photo-electric Cell Application, 204 (Books)
 — electric Cells, 22 (Books)
 Push-Pull Output Stages, 256 (Gen.)
 R.K. Valve (American) for Large Output with Low H.T., 614 (S.P.)
 Thyatron Inverter, 535 (Appar. Constr.); 646 (S.P.)
 Triodes in H.F. Amplifiers, 52 (Gen.); 145 (R.P.)
 Tungstram Diode, 593 (Gen.)

ILLUSTRATIONS

ABAC Calculator, 385
 Alexandra Palace, 234, 592
 All-Electric Home on Stage, 173
 Amateur Transmitter, G2LN, 643
 — Transmitter G2QH, 34
 — Transmitter G2UF, 67
 — Transmitter, G5LC, 574
 — Transmitter, J2GW, 85
 Archie, 343
 Ashbridge, Sir Noel, 563
 Auckland Broadcasting House, 573

BACH, 271
 Baird High Definition Apparatus, 192
 Baldwin, Stanley, 118
 B.B.C. Charter Committee, 477
 — Effects Studio, 275
 — Guildhall Commentary, 387
 — Mobile Recording Unit, 386
 — Rehearsing Vaudeville, 10
 — Studio, 131
 Beery, Noah, 618
 Ben Lomond Reception, 488
 Berlin 180-line Image, 577
 Beromunster, 99
 Blessing Polish Station, 141
 Boat Race, 342
 Boulton, Adrian, 199
 Bridge Playing by Wireless, 489
 Bridgeman, Lord, 347
 Brussels Exhibition: Danish Exhibit, 468
 — International Exhibition, 337
 B.T.H. 16 mm. Home Talkie, 36
 Budapest, 112
 — Announcer, 259
 Buenos Aires SW, 14
 Burrows, A. R., 395

CALLENDER'S Band, 523
 Canterbury Cathedral, 596
 Car and Boat Radio Installation, 419
 Carillon at St. Coleman's, 619
 Carnival at Nice, 221
 Chesterton, G. K., 567
 Coblenz, 460
 Cock, Gerald, 201, 563
 Copenhagen Church, 398
 — Woman Announcer, 287
 Covent Garden Opera House, 499
 Cresswell, Peter, 327

DANISH Short Wave Transmitter, 125
 Davos, 41
 Desert Song, 442
 D.F. on Air Liners, 31
 — Operator at Pulham, 214
 Dolmetsch Family, 644
 Duke of Gloucester at Fiji, 322
 Dunmow Flitch, 398

ECKERSLEY, P. P., 146

FERNSEH Television Theatre, 200
 Ferranti Factory, 139, 456
 Fireside Wireless, 276

GAINFORD, Lord, 109
 German Anti-Interference Apparatus, 438
 — Loewe Cathode Ray Television Receiver, 376
 — Mobile Recording Unit, 543
 — Television Film-cutting Table, 337
 — Woman Home Constructor, 365
 Gielgud, Val, 327
 Gordon Statue and Diary, 93
 Graves, Cecil, 241, 563

HARTLEY Quintet, 40
 Helsinki, 91
 Henry Hall's Orchestra, 119
 H.M.V. Universal, Model 340, Receiver, 426

IMPORTANCE of Being Ernest, 644
 Ingrid, Princess, 522
 Italian School Wireless, 647

JAPANESE Police Radio, 311
 — Short Wave Station, 76
 Jerusalem, 399
 — Station, 240
 Jubilee Pageantry, 377

KING, at H.M.V. Factory, 449
 — of Denmark, 473
 — George and Queen Mary, 440
 King, Reginald, 499
 King's House, 369
 Kipling, Rudyard, 441
 Konigsberg Studio, 133
 Körting Non-Directional Loud Speaker, 315

LEHAR, Franz, 423
 Lincoln, Abraham, 523
 Lodge's Original Loud Speaker, 312
 Loewe Cathode Ray Television Receiver, 376
 Lotinga, 645

MAGNA Carta, 618
 Mantovani and Orchestra, 322, 597
 Map, German Television, 525
 Marseilles-Realtor, 63
 McCulloch, Derek, 543
 Melba, 353
 Microphone Exhibits in New York, 413
 Midget Car Receiver, 649
 — Receiver, 527
 Moving Coil Headphones, 28
 Mrs. Jack Hylton and Band, 92
 Much Wenlock, 323
 Munich Anti-Fading Aerial, 44
 Murray, Gladstone, 179
 Mussolini, 503

NAGOYA Station, 448
 New York Lecture by Ultra Shorts, 109
 Niagara Broadcast in America, 405
 Nice-La Brague, 68
 Nightingale, 472
 Noise Suppressors in H.M.V. Laboratory, 104
 Normandie, 522
 Northern Ireland Regional, 179
 — Ireland Regional Mast, 277

OFFENBACH, 10
 Olympia Model, 565

PHYSICAL Jerks Broadcast, 37
 Piccadilly Orchestra, 472
 Pilsudski, Marshal Josef, 528
 Ploughing by Wireless, 263
 P.M.C. Television Committee, 142, 176
 Portable Transmitter for Reporters, 241
 Prague, 11

RADIO Bergen, 204
 — City Control Board, 293
 — Romania, 551
 Ramsay, Harold, and Orchestra, 68
 Receiver Built into Fireplace, 276
 Reith's Bust, 201
 Reyner's Television Demonstration, 541
 Robey, Mr. George, as Falstaff, 270
 "Romie," 372
 Roosevelt's Wife Broadcasts, 259
 Rugby, 559

ST. PAUL'S as Originally Designed, 499
 Savoy Orpheans, 247
 Selsdon, Lord, 217
 "Seth Parker," 301
 Snowdon, 637
 Stainless Stephen, 422
 Standard Telephones and Cables Factory, 225
 — Telephones and Cables, Oscillograph Unit, 56
 Stratosphere Transmitter, 589
 Stratton's Ultra-Short-Wave Transmitter, 588
 Stuttgart-Frankfurt, 11

TAUBER, 507
 Telefunken Short Wave Transmitter at Nagoya, 364
 — Ultra-Short Television Receiver, 155, 282
 — Television Apparatus, 167, 282
 Television Apparatus at Broadcasting House, 137
 — in France, 463
 — Map of London, 187
 — Reporter's Van, 239
 Test Match, 645
 Torun, Poland, 141
 Toscanini, 546
 Toulouse-Muret, 63
 Troise and Mandoliers, 270

VATICAN Station, 48
 Victorian Melodies, 297

Vienna al Fresco, 271

WARSAW Festivities, 443
 — Philharmonic Orchestra, 373
 — Station, 319
 Wax Cut by King's Voice, 19
 Weatherproof Microphone, 217
 Wembley Stadium, 118
 Woman Announcer, 40, 71
 — Control-Operator, 347
 — Engineer at Warsaw, 609
 Wood, Sir Henry, 501
 Whitley, J. H., 149
 Wimbledon, 613
 Wireless Military Band, 119
 Wren, Sir Christopher, 499

YELLOW Sands, 399
 "Youth at the Helm," 343

AUTHORS

ABRAHAMS, J. Godchaux, 379, 575
 Alway, E. J., 213
 Auditor, The, 11, 41, 69, 93, 119, 147, 173, 199, 221, 247, 271,
 297, 323, 343, 373, 398, 423, 441, 473, 499, 523, 547,
 567, 597, 619, 645

BEATTY, R. T., M.A., B.E., D.Sc., 267, 390, 421, 434, 464,
 518, 538, 564, 650.
 Begbie, Colin, 585
 Bell, D. A., 338, 648
 Branch, L. E. T., B.Sc., 81, 461
 Butler, F., B.Sc., 535

"CATHODE RAY," 39, 62, 83, 126, 266, 298, 320, 336, 367,
 446, 561, 621, 633
 Cocking, W. T., 26, 64, 110, 134, 158, 188, 236, 417, 444, 511,
 586, 606
 Colborn, C. H., B.Sc., A.M.I.E.E., 408
 Colebrook, F. M., B.Sc., D.I.C., A.C.G.I., 52, 138, 174, 193
 Coursey, Philip R., B.Sc., F.Inst.P., 582
 Crawley, Lt.-Col. Chetwode, 559

DAVEY, F. G. G., M.A., 35
 Denman, Roderick, M.A., A.M.I.E.E., A.F.R.Ae.S., 332
 Dent, H. B., 358, 382, 556

"Diallist," 66, 90, 124, 143, 176, 195, 228, 239, 274, 300, 330,
 352, 376, 401, 431, 453, 468, 502, 515, 550, 574, 594, 622,
 649

Dinsdale, A., 513

EXER, D., 14, 61, 106, 169, 212, 275, 314, 368, 412, 460, 526,
 565, 609

FREE GRID, D. L. W., 18, 42, 84, 140, 166, 216, 263, 294, 321,
 335, 366, 392, 424, 450, 470, 492, 516, 552, 568, 590, 616,
 Fursyth, Austin, 591

G2AW, 490
 G2TD and G5KU, 45, 75, 89, 286, 326, 469
 Gilbert, J. C. G., A.M.I.E.E., 612

HALLOWS, R. W., M.A., 164, 493
 Heightman, D. W., 29
 Hughes, L. E. C., Ph.D., 436

INGLIS, C. C., A.M.I.E.E., 283

JESSOP, Philip, A.R.C.S., D.I.C., 185

KINROSS, R. I., 617

MACFADYEN, K. A., M.Sc., 256
 Macnamara, T. C., 6
 McLachlan, N. W., 595
 Nee, F. G., M.A., B.Sc., 285
 Negacycle, 76, 125, 177, 240, 301, 364, 387, 448, 491, 545, 584,
 643
 "Microm," 447
 Mitchell, J. A. G., 408

NORTHERN Wanderer, 91

PARTRIDGE, N., B.Sc., A.M.I.E.E., 280
 Pearson, S. O., B.Sc., A.M.I.E.E., 161, 273, 362, 396

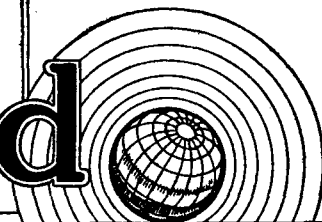
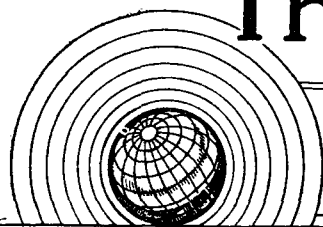
SCROGGIE, M. G., B.Sc., A.M.I.E.E., 104, 130, 232, 486, 529
 Sinclair, A. T., 150
 Sowerby, A. L. M., M.Sc., 21, 46, 97, 122, 152, 202, 226, 248,
 302, 328, 350, 374, 428, 451, 478, 504, 548, 601, 624

VON ARDENNE, Manfred, 254

WADLOW, E. C., Ph.D., B.Sc., 630
 Wait, E. V., B.Sc., B.E., 219
 Wilhelm, H. J., 107

The Wireless World

THE
PRACTICAL RADIO
JOURNAL
24th Year of Publication



No. 801.

FRIDAY, JANUARY 4TH, 1935.

VOL. XXXVI. No. 1.

Proprietors : ILIFFE & SONS LTD.

Editor :
HUGH S. POCOCK.

Editorial,
Advertising and Publishing Offices :
DORSET HOUSE, STAMFORD STREET,
LONDON, S.E.1.

Telephone : Hop. 3333 (50 lines).
Telegrams : "Ethaworld, Watloo, London."

COVENTRY : Hertford Street.
Telegrams : "Autocar, Coventry." Telephone : 5210 Coventry.

BIRMINGHAM :
Guildhall Buildings, Navigation Street, 2.
Telegrams : "Autopress, Birmingham." Telephone : 2971 Midland (4 lines).

MANCHESTER : 260, Deansgate, 3.
Telegrams : "Iliffe, Manchester." Telephone : Blackfriars 4412 (4 lines).

GLASGOW : 26B, Renfield Street, C.2.
Telegrams : "Iliffe, Glasgow." Telephone : Central 4857.

PUBLISHED WEEKLY. ENTERED AS SECOND
CLASS MATTER AT NEW YORK, N.Y.

Subscription Rates :
Home, £1 1s. 8d. ; Canada, £1 1s. 8d. ; other
countries, £1 3s. 10d. per annum.

As many of the circuits and apparatus described in these
pages are covered by patents, readers are advised, before
making use of them, to satisfy themselves that they would
not be infringing patents.

CONTENTS

	Page
Editorial Comment	1
Holland's Empire Station	2
The Bulb of Many Uses	4
Field Strength Measurement	6
Listeners' Guide for the Week	10
Hints and Tips	12
Radio Communication	13
News of the Week	15
Marconiphone Radio-gramophone, Model 292	16
Unbiased	18
Broadcast Brevities	19
New Apparatus Reviewed	20
Foundations of Wireless, VII	21
Principal Broadcast Stations	23

EDITORIAL COMMENT

Broadcasting's Most Urgent Need

Wider Frequency Separation

A STAGE in the design of receivers for broadcast reception has been reached where further progress is no longer possible until changes are made in the system of broadcast distribution. Receivers are available capable of extremely high quality of reproduction, but, except under unusual and most favourable conditions, the full advantages of their capabilities cannot be realised, owing to the narrow frequency band transmitted or the proximity of other transmitting stations.

The frequency range transmitted by the best stations of the B.B.C. is at least equal to that of any transmitters elsewhere in Europe, or, indeed, in the world. Really good reproduction, to be satisfying, should cover a range of about 30-13,000 cycles, but the B.B.C. is far behind this. Unless we are favourably situated near a B.B.C. station, we cannot even enjoy the range at present transmitted without the risk of adjacent-channel interference. It is certainly no use, under present conditions, for the B.B.C. to try to improve much upon their present quality.

The remedy is obvious. It will be necessary, before any real progress can be made and before present technique of receiver design can be utilised to advantage, for the frequency band to be widened at the cost of eliminating a number of stations.

But, unfortunately, all countries in Europe do not at present agree on the question of quality and prefer to compromise. They are content to transmit a much narrower band of frequencies than is required, even for passable quality. This being so, it

ought surely to be possible to devise a scheme for wavelength distribution where those countries desiring to improve the quality of their transmissions could do so without being penalised by the attitude of less progressive nations.

If all countries could agree to the necessity for a wider transmission band for each station, the problem would be solved; but since this seems to be an unattainable goal at present we must look elsewhere for a solution of the problem.

The Solution?

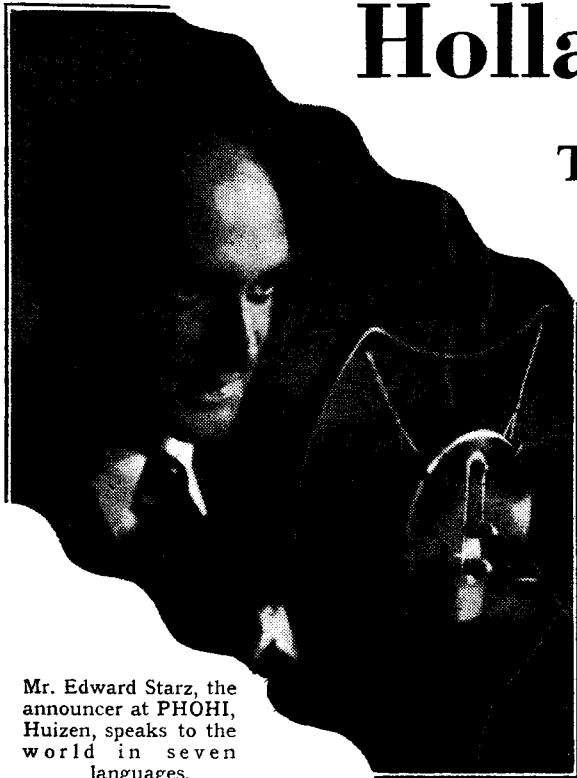
We are thrown back, then, on to a suggestion which has been put forward in *The Wireless World* from time to time, that instead of distributing wavelengths amongst the various countries on the present lines so that stations of different nationality jostle one another in all too intimate contact, each country should be allotted a definite band or bands of wavelengths exclusively for their own use. This would mean that, having gained possession of these wavelengths, each country could please itself as to whether the bands were crammed with a large number of stations transmitting poor quality or a limited number putting out the highest quality possible.

Designers and manufacturers of broadcast receivers are marking time; they have the knowledge available to produce sets capable of extremely high quality reproduction, but they are at present deterred from doing so because, under existing conditions, the general public would not be able to take advantage of their possibilities.

Quite definitely the next step towards improving the standard of reception must come from those responsible for wavelength distribution, and some radical change is already overdue.

Holland's Empire Station

The New Short-wave Service at Huizen



Mr. Edward Starz, the announcer at PHOHI, Huizen, speaks to the world in seven languages.

SEVEN years ago a dramatic wire flashed into the office of the Philips Radio Laboratory in Eindhoven. It consisted of these four words: "We can hear you." This laconic message spelt the triumphant conclusion of years of patient experiment. It came from Bandoeng, in the East Indies, and signified that the experimental transmitter PCJJ had established communication by short-wave telephony between Holland and her Colonial Empire.

By this achievement Station PCJJ was placed on the road to success; and from the most modest beginnings the experimental transmitter developed into a noted radio station with a large listening public scattered all over the world. The little station received its due acknowledgment and reward when, on July 1st, 1927, the Queen of Holland visited the studio and spoke to her subjects through the PCJJ microphone, addressing a vast unseen audience divided between two hemispheres; one in the East Indies, where Holland has rich colonial possessions, the other in the West Indies, where there have been Dutch settlements since the 17th century.

A Permanent Station

The enthusiasm of the Dutch people at home as well as overseas was unbounded at the success of the broadcast. The question of a permanently established radio centre for the colonies was mooted. The PHOHI station came into being.

The station's strange name is formed from the first two letters of "Philips" plus the initial letters of the words "Omreop Holland-Indie," Holland-Indies Broadcasting. It is pronounced as a word: "fo-hee."

The experience obtained with the PCJJ transmitter was found most useful when

IN colonial broadcasting Holland has always led the way, a short-wave service to the Indies having been in operation at Eindhoven seven years ago. This description of the newly designed Philips short-wave station at Huizen shows that the early tradition is being more than maintained

the new transmitting installation was being designed and constructed.

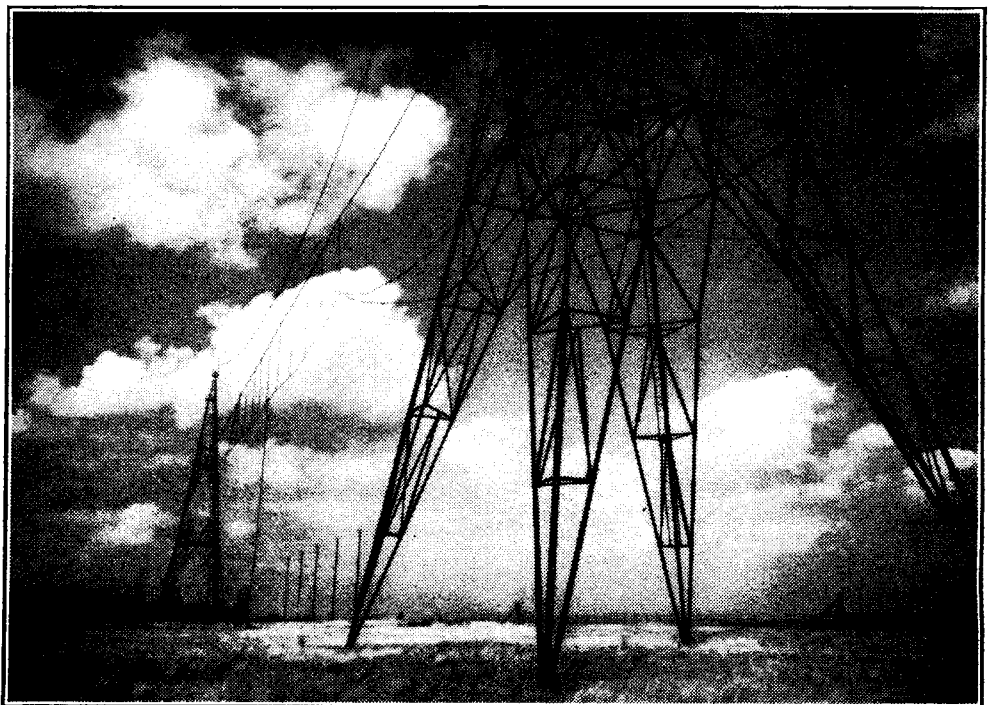
Agrarian interests, shipping and oil companies, banks and commercial enterprises were quick to see the importance of the new transmissions to their employees, and they gave full support to the initiation and development of the project.

In the autumn of 1929 the first experimental broadcasts took place; they were transmitted on a wavelength of 16.88 metres, and with a power of 20 kilowatts, an expenditure of electrical energy regarded as considerable for an ultra short-wave transmitter even to-day. Results were good right from the beginning. A few months after the opening of the new station various American radio corporations relayed a PHOHI Christmas programme; and hundreds of letters of appreciation from American listeners reached Hilversum by the first mail-boat. Reception in the East Indies (the programme including a running commentary on a football match) was particularly good.

The home programmes did much to add variety and interest to the exile of many of the Dutch colonists in the Far East. "No other short-wave station," commented the East Indian journal of Commerce, the *Serabayan Handelsblad*, "can compete with PHOHI, either with regard to the technique of transmission or the choice of programmes." Indeed, the musical and artistic standing of the new station reached a high standard of excellence.

In spite of the efficiency of this particular station, broadcasting in general in Holland at this date had become erratic and chaotic. Active Government intervention was decided upon, and the innocent had to suffer with the guilty. The colonial station was closed down, and remained silent for two years. At length, after protracted negotiations and in response to urgent demands from the Indies, a compromise was effected, and the reopening of the station was arranged for the autumn of 1932.

The official inauguration took place in December of that year. But the general enthusiasm was somewhat tempered when



A portion of Holland's colonial station at Huizen. The nearer aerial is used by transmitter PHI, using a wavelength of 16.88 metres. A twin transmitter, PCJ, operates simultaneously on 19.71 metres.