

GENERAL INDEX

Volume 78, January-December 1972

- A.M. receivers, noise silencer for, D.A. Tong, 483 Oct.
- ABOUT PEOPLE, 43 Jan., 93 Feb., 150 Mar., 184 Apr., 248 May, 297 June, 352 July, 397 Aug., 444 Sept., 468 Oct., 550 Nov.
- Aerial, h.f. hybrid, T.A. Lindsey, 151 Mar.
- Amateur transceiver, 10-80 metre, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Corrections*, 480 Oct.
- Amplifier for muscle voltages, simple, R.E. George, 495 Oct., *Correction*, 544 Nov.
- , special purpose, W.T. Cocking, 283 June
- , universal meter, A.J. Ewins, 61 Feb., *Letters*, 175 Apr.
- Amplifiers, low-noise audio, H.P. Walker, 233 May, *Letters*, 388 Aug., 520 Nov., 575 Dec.
- Analogue recursive computer, R. J. Lamden, 487 Oct.
- Audio amplifier, high-power, R.B.H. Becker, 79 Feb., *Letters*, 114 Mar., 226 May
- Fair, London-Review, 595 Dec.
- mixer, modulated integrated circuit, J.H. Evans & P. Williams, 564 Dec.
- pre-amplifier using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.
- telephone exchange, miniature, G. F. Goddard, 90 Feb., *Modifications*, P. F. Gascoyne, 194 Apr., *Letters*, 177 Apr., 265 June
- Batteries, metal-air, 541 Nov.
- Battery saving circuit for portable communication receivers, D.A. Tong, 124 Mar.
- Beacon system, British Isles, v.h.f., Jack Hum, 491 Oct.
- BOOKS RECEIVED, 5 Jan., 86 Feb., 142 Mar., 177 Apr., 228 May, 340 July, 380 Aug., 539 Nov., 610 Dec.
- British broadcasting, 506 Nov.
- Building bricks, electronic, James Franklin, 28 Jan., 74 Feb., 126 Mar., 178 Apr., 238 May, 286 June, 350 July, 390 Aug., 418 Sept., *Correction*, 285 June
- Calculator, Wireless World desk, R. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.
- Capacitor, high-voltage, 113 Mar.
- Cassette tape recorder decks, stereo, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June
- video recorders, magnetic-tape, 580 Dec.
- Cheap, stable local oscillator, 218 May
- Circards J. Carruthers, J.H. Evans, J. Kinsler & P. Williams 1: Basic active filters, 469 Oct., 2: Switching circuits, 514 Nov., 3: Waveform generators, 578 Dec.
- CIRCUIT IDEAS, 18 Jan., 77 Feb., 139 Mar., 185 Apr., 239 May, 274 June, 348 July, 366 Aug., 443 Sept., 475 Oct., 540 Nov.
- Communication receivers, battery saving circuit for portables, D. A. Tong, 124 Mar.
- Communications '72, 376 Aug., List of exhibitors, 282 June
- Computer, analogue recursive, R.J. Lamden, 487 Oct.
- CONFERENCES AND EXHIBITIONS, 44 Jan., 123 Mar., 166 Apr., 228 May, 281 June, 315 July, 426 Sept., 490 Oct.
- Constant-current source, high-voltage, D.A. Williams, 29 Jan.
- Current-limited power supply, A. Royston, 67 Feb., *Corrections*, 110 Mar., 424 Sept.
- D.C. motors, towards better control of small, P.L. Hollingberry, 333 July
- scope, trace quadrupler, D. Bollen, 204 May, *Letters*, 479 Oct.
- Decibel meter, linear, J. H. Smith, 488 Oct.
- Decoder, stereo, phase-locked-loop, 315 July
- Desk calculator, Wireless World, R. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.
- Digital and analogue dividers, P. R. Darrington, 529 Nov.
- display using an oscilloscope, C. Attenborough, 586 Dec.
- stereo sound recorder, A. H. Jones & F. A. Bellis, 432 Sept.
- Digitally, displaying frequency, correction to Dec. 1971 article, 13 Jan.
- Dimensional display, unified, R. N. Baldock, 117 Mar.
- Directional information in reproduced sound, P. B. Fellgett, 413 Sept., *Correction*, 544 Nov.
- phasor diagrams, A. R. Carruthers & J. H. Evans, 381 Aug.
- Distortion monitor, portable, J. L. Linsley Hood, 306 July, *Correction*, 480 Oct.
- Dividers, digital and analogue, P. R. Darrington, 529 Nov.
- Domestic receiver survey, 464 Oct.
- video recorder, 435 Sept., *Letters*, 523 Nov.
- Doppler effect, "Cathode Ray", 240 May, 267 June, *Letters*, 387 Aug., 423 Sept., 477 Oct., 523 Nov.
- radar with sense, K. Holford, 535 Nov.
- Dual-trace oscilloscope unit, W. T. Cocking, 19 Jan.
- EDITORIALS, 1 Jan., 53 Feb., 103 Mar., 153 Apr., 203 May, 255 June, 305 July, 357 Aug., 405 Sept., 455 Oct., 505 Nov., 563 Dec.
- Educational television network, Aubrey Harris, 87 Feb.
- Electric heater control, R. M. Marston, 287 June, *Letters*, 480 Oct.
- Electricity meter, experimental, L. A. Trinogga, 33 Jan.
- Electronic building bricks, James Franklin, Closed loop follower, 178 Apr. Function generator, 74 Feb. Logic gates, 350 July. More logic gates, 390 Aug. Noise, 286 June. The channel, 418 Sept. The gate, 238 May, *Correction*, 285 June. The rectifier, 28 Jan. Units and dimensions, 126 Mar. multimeter, simple, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug. — retina, N. A. Singer, 161 Apr.
- Experiments with operational amplifiers, G. B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., *Letters*, 387 Aug., 480 Oct.
- F.e.t., junction, as a voltage controlled resistance, R. M. Lea, 337 July, 394 Aug. — tester, correction to Dec. 1971 article, 110 Mar.
- F.M. tuner design — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July
- Farnborough-Europe '72, 481 Oct.
- Feedforward error control, 232 May
- Fixed aerial for satellite reception, J. M. Osborne, 335 July
- Four-channel stereo, Geoffrey Shorter, 2 Jan., 54 Feb.
- Free roving machine, M. F. Huber, 593 Dec.
- Frequency meter, linear, D. Anderson, 38 Jan. — synthesizers, J. R. Philpott, 269 June
- Function generator, non-linear, H. McPherson, 485 Oct.
- Generator, variable pulse rate, D. T. Smith, 137 Mar. —, white-noise, H. R. Beastall, 127 Mar., *Letters*, 223 May, 264 June
- Graphical analysis of pulses on lines, B. L. Hart, 427 Sept., *Letters*, 576 Dec.
- H.F. aerial, hybrid, T. A. Lindsey, 141 Mar.
- H.F. PREDICTIONS, 32 Jan., 86 Feb., 125 Mar., 160 Apr., 244 May, 268 June, 332 July, 375 Aug., 410 Sept., 493 Oct., 519 Nov., 585 Dec.
- Hand-portable transceiver, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.
- High-power audio amplifier design, R. B. H. Becker, 79 Feb., *Letters*, 114 Mar., 226 May
- loudspeaker voice coils, working temperatures of, A. E. Falkus, 543 Nov.
- quality tape recorder p.c.b.s., 336 July
- voltage capacitor, 113 Mar.
- constant-current source, D. A. Williams, 29 Jan.
- Horn loudspeaker — Mk II, John Greenbank, 14 Jan.
- How to simplify logic circuits, N. Darwood, 173 Apr.
- Hybrid h.f. aerial, T. A. Lindsey, 141 Mar.
- Integrated circuit audio mixer, modulated, J. H. Evans & P. Williams, 564 Dec.
- I.c. peak programme meter, L. Nelson-Jones, 515 Nov.
- I.E.A. Exhibitors, 246 May, report, 341 July
- I.E.E.E. show New York, 243 May
- Instant intelligence, the mirage of, M. B. Hawton, 294 June
- Junction f.e.t. as a voltage-controlled resistance, R. M. Lea, 337 July, 394 Aug.
- f.e.t.s, use of, L. Unsworth, 219 May
- LETTER FROM AMERICA, 244 May, 600 Dec.
- LETTERS TO THE EDITOR, 9 Jan., 72 Feb., 114 Mar., 175 Apr., 223 May, 264 June, 316 July, 387 Aug., 423 Sept., 476 Oct., 520 Nov., 575 Dec.
- Linear decibel meter, J. H. Smith, 488 Oct.
- frequency meter, D. Anderson, 38 Jan.
- Linearity of the transistor amplifier, W. T. Cocking, 210 May
- LITERATURE RECEIVED, 52 Jan., 101 Feb., 152 Mar., 201 Apr., 254 May, 298 June, 356 July, 403 Aug., 454 Sept., 502 Oct., 551 Nov., 609 Dec.
- Local oscillator, cheap, stable, 218 May
- Logic circuits, how to simplify, N. Darwood, 173 Apr.
- Long-playing records, video, 474 Oct.
- Loudspeaker enclosure survey, S. Kelly, 552 Nov., *Corrections*, 594 Dec.
- , transmission-line, A. R. Bailey, 215 May, *Letters*, 477 Oct.
- , horn, Mk II, John Greenbank, 14 Jan.
- , voice coils, working temperatures of high-power, A. E. Falkus, 543 Nov.
- Low-impedance microphone pre-amplifier, J. M. Howells & J. R. Jones, 36 Jan.
- noise audio amplifiers, H. P. Walker, 233 May, *Letters*, 388 Aug., 520 Nov., 575 Dec.
- Magnetic-tape cassette video recorders, 580 Dec.
- Medium waves, s.s.b. on, G. Wareham, 358 Aug., *Letters*, 476 Oct., 523 Nov.
- MEETINGS, 46 Jan., 100 Feb., 151 Mar., 195 Apr., 237 May, 266 June, 503 Oct., 534 Nov., 610 Dec.
- Metal-air batteries, 541 Nov.
- Meter amplifier, universal, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.
- , i.c. peak programme, L. Nelson-Jones, 515 Nov.
- , linear decibel, J. H. Smith, 488 Oct.
- , frequency, D. Anderson, 38 Jan.
- , recording level and a.g.c., J. M. Bryant, 169 Apr.
- , sound pressure-level, J. L. Linsley Hood, 167 Apr.
- Microphone pre-amplifier, low-impedance, J. M. Howells & J. R. Jones, 36 Jan.
- Miniature automatic telephone exchange, G. F. Goddard, 90 Feb. *Modifications*, P. F. Gascoyne, 194 Apr. *Letters*, 177 Apr., 265 June
- Mirage of instant intelligence, M. B. Hawton, 294 June
- Modulated integrated circuit audio mixer, J. H. Evans & P. Williams, 564 Dec.
- Mobile/portable power unit for h.f. transceiver, D. R. Bowman, 601 Dec.
- Multimeter, simple electronic, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.
- Multivibrators with seven-decade range in period, D. T. Smith, 85 Feb., *Letters*, 265 June
- Muscle voltages, simple amplifier for, R. E. George, 495 Oct., *Correction*, 544 Nov.
- Nearer the tubeless TV camera, 138 Mar.
- NEW PRODUCTS, 47 Jan., 95 Feb., 145 Mar., 196 Apr., 249 May, 299 June, 353 July, 399 Aug., 449 Sept., 497 Oct., 546 Nov., 603 Dec.
- NEWS OF THE MONTH, 6 Jan., 58 Feb., 111 Mar., 170 Apr., 212 May, 259 June, 313 July, 364 Aug., 411 Sept., 472 Oct., 532 Nov., 571 Dec.
- Noise reduction, tape, J. R. Stuart, 104 Mar., *Letters*, 266 June
- silencers for a.m. receivers, D. A. Tong, 483 Oct.
- Non-linear function generator, H. McPherson, 485 Oct.
- Operational amplifiers, experiments with, G. B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., *Letters*, 387 Aug., 480 Oct.
- Oscillators, temperature stabilization, D. A. Tong, 41 Jan.
- Oscilloscope unit, dual-trace, W. T. Cocking, 19 Jan.
- PAL decoder, A. Becker, 26 Jan.
- Paris components show, 276 June
- Peak programme meter, i.c., L. Nelson-Jones, 515 Nov.
- Phase-locked-loop stereo decoder, 315 July
- sensitive detector, ubiquitous, K. L. Smith, 367 Aug.
- Phasor diagrams, displaying, A. R. Carruthers & J. H. Evans, 381 Aug.
- Photographing television pictures, R. E. Knight & D. J. Bryan, 290 June
- Physics Exhibition, notes from the, 229 May
- Plotting sound fields by colour light, 60 Feb.
- Portable communication receivers, battery saving circuit, D. A. Tong, 124 Mar.
- distortion monitor, J. L. Linsley Hood, 306 July, *Correction*, 480 Oct.
- Power supply, current-limited, A. Royston, 67 Feb., *Corrections*, 110 Mar., 424 Sept.
- unit for h.f. transceiver, mobile/portable, D. R. Bowman, 601 Dec.
- Pre-amplifier, audio, using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.
- low impedance for microphone, J. M. Howells & J. R. Jones, 36 Jan.
- Pulse-rate generator, variable, D. T. Smith, 137 Mar.
- Pulses on lines, graphical analysis of, B. L. Hart, 427 Sept., *Letters*, 576 Dec.
- Quadrphony news, 424 Sept.
- Radar, Döppler with sense, K. Holford, 535 Nov.
- Radio receivers, some early, A. M. Peverett, 510 Nov., *Corrections*, 594 Dec.
- reception developments, 445 Sept.
- synchronous detection in, Pat Hawton, 419 Sept., 515 Nov., *Letters*, 523 Nov.
- REAL & IMAGINARY "Vector", 102 Feb., 202 Apr., 304 June, 404 Aug., 504 Oct., 611 Dec.
- Receiver survey, domestic, 464 Oct.
- Receivers, noise silencer for a.m., D. A. Tong, 483 Oct.

Recorder, domestic video, 435 Sept., *Letters*, 523 Nov.
 Recording level meter and a.g.c., J. M. Bryant, 169 Apr.
 Records, video long-playing, 474 Oct.
 Reproduced sound, directional information in, P. B. Fellgett, 413 Sept., *Correction*, 544 Nov.
 Reshaping information to suit the channel, 320 July
 Retina, electronic, N. A. Singer, 161 Apr.
 Roving machine, free, M. F. Huber, 593 Dec.

S.S.B. on medium waves?, G. Wareham, 358 Aug., *Letters*, 476 Oct., 523 Nov.
 *Scope, d.c. trace quadrupler, D. Bollen, 204 May, *Letters*, 479 Oct.

Seven-decade range in period multivibrators, D. T. Smith, 85 Feb., *Letters*, 265 June
 Simple amplifier for muscle voltages, R. E. George, 495 Oct., *Correction*, 544 Nov.
 ——— electronic multimeter, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.

Simplifying logic circuits, N. Darwood, 173 Apr.
 SIXTY YEARS AGO, 40 Jan., 84 Feb., 142 Mar., 192 Apr., 217 May, 285 June, 312 July, 375 Aug., 422 Sept., 480 Oct., 544 Nov., 585 Dec.

Solder tests, B. M. Allen, 75 Feb.
 Sonex 72, 227 May, preview, 143 Mar.
 Sound adaptors for television, 65 Feb.
 ——— field plotting by colour lights, 60 Feb.
 ——— pressure-level meter, J. L. Linsley Hood, 167 Apr.
 ——— recorder, digital stereo, A. H. Jones & F. A. Bellis, 432 Sept.

Special-purpose amplifier, W. T. Cocking, 283 June
 Stereo by four-channel Geoffrey Shorter, 2 Jan., 54 Feb.
 ——— cassette tape recorder decks, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June
 ——— decoder, phase-locked-loop, 315 July
 ——— sound recorder, digital, A. H. Jones & F. A. Bellis, 432 Sept.

Survey, loudspeaker enclosure, S. Kelly, 552 Nov., *Corrections*, 594 Dec.

Synchronous detection in radio reception, Pat Hawker, 419 Sept., 525 Nov., *Letters*, 523 Nov.

Synthesizers, frequency, J. R. Philpott, 269 June

T.T.L. trigger circuits, H. A. Cole, 31 Jan., *Letters*, 73 Feb., 116 Mar.

TV sound — the poor relation, J. C. G. Gilbert, 16 Jan., *Letters*, 114 Mar.

Tape noise reduction, J. R. Stuart, 104 Mar., *Letters*, 266 June
 ——— recorder decks, stereo cassette, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June

Telephone exchange, miniature automatic, G. F. Goddard, 90 Feb. Modifications, P. F. Gascoyne, 194 Apr., *Letters*, 177 Apr., 265 June

Television network, educational, Aubrey Harris, 87 Feb.
 ——— pictures, photographing, R. E. Knight & D. J. Bryan, 290 June
 ——— sound adaptors, 65 Feb.

Temperature stabilization of oscillators, D. A. Tong, 41 Jan.

Tester, f.e.t., correction to Dec. 1971 article, 110 Mar.
 Towards better control of small d.c. motors, P. L. Hollingberry, 333 July

Trace quadrupler for d.c. scopes, D. Bollen, 204 May, *Letters*, 479 Oct.

Transceiver, amateur, 10-80 metre, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Correction*, 480 Oct.
 ——— hand-portable, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.

Transistor amplifier, linearity of the, W. T. Cocking, 210 May

Transmission-line loudspeaker enclosure, A. R. Bailey, 215 May, *Letters*, 477 Oct.

Trigger circuits, t.t.l., H. A. Cole, 31 Jan., *Letters*, 73 Feb., 116 Mar.

Tubeless TV camera, nearer the, 138 Mar.
 Tuneable phonon sources, 211 May

Tuner design, f.m. — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July

Ubiquitous phase sensitive detector, K. L. Smith, 367 Aug.

Unified dimensional display, R. N. Baldock, 117 Mar.

Universal meter amplifier, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.

Using junction f.e.t.s. L. Unsworth, 219 May

V.h.f. beacon system, British Isles, Jack Hum, 491 Oct.

Variable pulse-rate generator, D. T. Smith, 137 Mar.

"Vector" articles:
 This and that: but mostly Raudive, 102 Feb.
 "It will not last the night —", 202 Apr., *Letters*, 304 June

What hath Babbage wrought?, 304 June
 "... through a glass, darkly ...", 404 Aug.
 Crisis in the West, 504 Oct.
 The stone age of broadcasting, 611 Dec.

Video long-playing records, 474 Oct.
 ——— recorder, domestic, 435 Sept., *Letters*, 523 Nov.
 ——— recorders, magnetic-tape cassette, 580 Dec.

White-noise generator, H. R. Beasall, 127 Mar., *Letters*, 223 May, 264 June

Wireless World desk calculator, K. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.

Working temperatures of high-power loudspeaker voice coils, A. E. Falkus, 543 Nov.

WORLD OF AMATEUR RADIO, 45 Jan., 94 Feb., 144 Mar., 193 Apr., 245 May, 296 June, 351 July, 398 Aug., 448 Sept., 494 Oct., 545 Nov., 608 Dec.

CLASSIFIED INDEX

AUDIO & ACOUSTICS

Amplifiers, low-noise audio, H. P. Walker, 233 May, *Letters*, 388 Aug., 520 Nov., 575 Dec.
 Audio amplifier, high-power, R. B. H. Becker, 19 Feb., *Letters*, 114 Mar., 226 May
 ——— mixer, modulated integrated circuit, J. H. Evans & P. Williams, 564 Dec.
 ——— pre-amplifier using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.

Cassette tape recorder decks, stereo, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June

Decoder, stereo, phase-locked-loop, 315 July
 Digital stereo sound recorder, A. H. Jones & F. A. Bellis, 432 Sept.

Directional information in reproduced sound, P. B. Fellgett, 413 Sept., *Correction*, 544 Nov.

Döppler effect, "Cathode Ray", 240 May, 267 June, *Letters*, 387 Aug., 423 Sept., 477 Oct., 523 Nov.

F.M. tuner design — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July

Feedforward error control, 232 May
 Four-channel stereo, Geoffrey Shorter, 2 Jan., 54 Feb.

High-power audio amplifier design, R. B. H. Becker, 79 Feb., *Letters*, 114 Mar., 226 May

—— loudspeaker voice coils, working temperatures of, A. E. Falkus, 543 Nov.

Horn loudspeaker — Mk II, John Greenbank, 14 Jan.

I.C. peak programme meter, L. Nelson-Jones, 515 Nov.
 Integrated circuit audio mixer, modulated, J. H. Evans & P. Williams, 564 Dec.

Loudspeaker enclosure survey, S. Kelly, 552 Nov., *Correction*, 594 Dec.

—— transmission-line, A. R. Bailey, 215 May, *Letters*, 477 Oct.

—— horn, Mk II, John Greenbank, 14 Jan.

—— voice coils, working temperatures of high-power, A. E. Falkus, 543 Nov.

Low-impedance microphone pre-amplifier, J. M. Howells & J. R. Jones, 36 Jan.

Low-noise audio amplifiers, H. P. Walker, 233 May, *Letters*, 388 Aug., 520 Nov., 575 Dec.

Meter, i.c. peak programme, L. Nelson-Jones, 515 Nov.
 ——— recording level and a.g.c., J. M. Bryant, 169 Apr.

—— sound pressure-level, J. L. Linsley Hood, 167 Apr.
 Microphone pre-amplifier, low-impedance, J. M. Howells & J. R. Jones, 36 Jan.

Modulated integrated circuit audio mixer, J. H. Evans & P. Williams, 564 Dec.

Noise reduction, tape, J. R. Stuart, 104 Mar., *Letters*, 266 June

Peak programme meter, i.c., L. Nelson-Jones, 515 Nov.
 Phase-locked-loop stereo decoder, 315 July

Pre-amplifier, audio, using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.

—— low-impedance, for microphone, J. M. Howells & J. R. Jones, 36 Jan.

Quadruphony news, 424 Sept.

Radio receivers, some early, A. M. Peverett, 510 Nov., *Correction*, 594 Dec.

Recording level meter and a.g.c., J. M. Bryant, 169 Apr.
 Reproduced sound, directional information in, P. B. Fellgett, 413 Sept., *Correction*, 544 Nov.

Sound pressure-level meter, J. L. Linsley Hood, 167 Apr.
 ——— recorder, digital stereo, A. H. Jones & F. A. Bellis, 432 Sept.

Stereo by four-channel, Geoffrey Shorter, 2 Jan., 54 Feb.
 ——— cassette tape recorder decks, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June

—— decoder, phase-locked-loop, 315 July
 ——— sound recorder, digital, A. H. Jones & F. A. Bellis, 432 Sept.

Survey, loudspeaker enclosures, S. Kelly, 552 Nov., *Correction*, 594 Dec.

TV sound — the poor relation, J. C. G. Gilbert, 16 Jan., *Letters*, 114 Mar.

Tape noise reduction, J. R. Stuart, 104 Mar., *Letters*, 266 June

—— recorder decks, stereo cassette, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June

Transmission-line loudspeaker enclosure, A. R. Bailey, 215 May, *Letters*, 477 Oct.

Tuner design, f.m. — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July

Working temperatures of high-power loudspeaker voice coils, A. E. Falkus, 543 Nov.

BROADCASTING

A.M. receivers, noise silencer for, D. A. Tong, 483 Oct.
 Aerial for satellite reception, fixed, J. M. Osborne, 335 July
 Another PAL decoder, A. Becker, 26 Jan.

British broadcasting, 506 Nov.

Cassette video recorders, magnetic-tape, 580 Dec.

Digital stereo sound recorder, A. H. Jones & F. A. Bellis, 432 Sept.

Domestic receiver survey, 464 Oct.

—— video recorder, 435 Sept., *Letters*, 523 Nov.

Educational television network, Aubrey Harris, 87 Feb.

Long-playing records, video, 474 Oct.

Magnetic-tape cassette video recorders, 580 Dec.
 Medium waves, s.s.b. on, G. Wareham, 358 Aug., *Letters*, 476 Oct., 523 Nov.

Nearer the tubeless TV camera, 138 Mar.

Noise silencer for a.m. receivers, D. A. Tong, 483 Oct.

PAL decoder, A. Becker, 26 Jan.
 Photographing television pictures, R. E. Knight & D. J. Bryan, 290 June

Radio reception developments, 445 Sept.
 ——— synchronous detection in, Pat Hawker, 419 Sept., 525 Nov., *Letters*, 523 Nov.

Receiver survey, domestic, 464 Oct.

Receivers, noise silencer for a.m., D. A. Tong, 483 Oct.
 ——— some early radio, A. M. Peverett, 510 Nov., *Correction*, 594 Dec.

Recorder, domestic video, 435 Sept., *Letters*, 523 Nov.

Records, video long-playing, 474 Oct.

S.S.B. on medium waves? G. Wareham, 358 Aug., *Letters*, 476 Oct., 523 Nov.

Sound adaptors for television, 65 Feb.

Stereo sound recorder, digital, A. H. Jones & F. A. Bellis, 432 Sept.

Synchronous detection in radio reception, Pat Hawker, 419 Sept., 525 Nov., *Letters*, 523 Nov.

TV sound — the poor relation, J. C. G. Gilbert, 16 Jan., *Letters*, 114 Mar.

Television network, educational, Aubrey Harris, 87 Feb.
 ——— pictures, photographing, R. E. Knight & D. J. Bryan, 290 June

—— sound adaptors, 65 Feb.

Tubeless TV camera, nearer the, 138 Mar.

Video long-playing records, 474 Oct.
 ——— recorder, domestic, 435 Sept., *Letters*, 523 Nov.
 ——— recorders, magnetic-tape cassette, 580 Dec.

CIRCUIT IDEAS

A.C. waveforms, zero marking of, T. Palmer, 185 Apr.
 Active filter, low-pass, S. J. Morris, 186 Apr.

—— zener with slow run up, J. Skjelstad, 185 Apr.

Amplifier, op-amp meter, H. MacDonald, 443 Sept.
 Automatic car parking lamp, P. Lacey, 274 June

Battery charger, constant-current, D. Allen, 185 Apr.

Class B amplifiers, output transistor protection, J. R. I. Piper, 77 Feb.

Constant-amplitude triangular-waveform generator, D. J. Price, 348 July

—— current battery charger, D. Allen, 185 Apr.
 Converter, stable voltage-to-frequency, S. Tesic, 78 Feb.

Crystal marker identification, G. Dann, 77 Feb.

D.C. amplifier, simple, R. M. Carter, 239 May, *Letter*, 424 Sept.

Diode pump, R. Barrett, 274 June

Electronic thermometer uses i.c., B. E. Kerley, 366 Aug.

Equalization, remote switching of tape, J. B. Cole, 348 July

F.M. demodulator, low distortion, P. Keenan, 185 Apr.

Failure indicator, J. George, 275 June

Fast rise-time multivibrator, C. R. Masson, 239 May

Filter and oscillator, voltage controlled, D. G. Malham, 443 Sept.

—— voltage-controlled high-pass, D. G. Malham, 349 July

Five-volt logic power supply, J. Taylor, 139 Mar.

Frequency doubler, R. E. Webb, 540 Nov.

Function generator, ultra-slow, N. S. Nicola, 139 Mar.

Generator, triangular waveform, H. Macdonald, 77 Feb.

High impedance input protection at microvolt level, A. Ivanov, 140 Mar.

—— level low-distortion tone control, J. N. Ellis, 78 Feb.

—— pass filter, voltage-controlled, D. G. Malham, 349 July

Input protection at microvolt level, high impedance, A. Ivanov, 140 Mar.

Inverted Wien bridge oscillator, G. W. Short, 78 Feb.

Long-pulse relay trigger, R. L. Bratby, 349 July

Low distortion f.m. demodulator, P. Keenan, 185 Apr.

—— pass active filter, S. J. Morris, 186 Apr.

Matching unit for tuners and i.f. strips, A. Clements, 18 Jan.
 Meter protection circuit, C. Shenton, 475 Oct., *Correction*, 540 Nov.
 Monostable with long adjustable recovery, D. A. Tong, 349 July
 Multivibrator, fast rise time, C. R. Masson, 239 May
 Op-Amp meter amplifier, H. MacDonald, 443 Sept.
 Oscillator, inverted Wien bridge, G. W. Short, 78 Feb.
 —, Wien bridge, L. D. Thomas, 275 June
 Output transistor protection in class B amplifiers, J. R. I. Piper, 77 Feb.
 Overtone oscillator, L. V. Gibbs, 186 Apr.
 Peak detector, P. E. Pinnock, 348 July
 Power supply, five volt logic, J. Taylor, 139 Mar.
 Prolonging effective switch contact time, A. C. Grillet, 274 June
 Protection circuit, meter, C. Shenton, 475 Oct., *Correction*, 540 Nov.
 Pulse generator for diode emitters, D. M. Bussell, 18 Jan.
 Relay trigger, long pulse, R. L. Bratby, 349 July
 Remote switching of tape equalization, I. B. Cole, 348 July
 Sample-and-hold circuit, J. Kilvington, 275 June
 Schmitt trigger with op-amp, J. Rowley, 366 Aug.
 Scratch filter, A. E. Prinn, 140 Mar.
 Simple d.c. amplifier, R. M. Carter, 239 May, *Letters*, 424 Sept.
 Stable voltage-to-frequency converter, S. Tesic, 78 Feb.
 Switch contact time, prolonging effective, A. C. Grillet, 274 June
 Tape equalization, remote switching of, J. B. Cole, 348 July
 Tester for f.e.t.s., simple, J. Skjelstad, 443 Sept.
 Thermometer, electronic, uses i.c., B. E. Kerley, 366 Aug.
 Tone control, high-level low-distortion, J. N. Ellis, 78 Feb.
 Touch controlled tuner, J. W. Richter, 475 Oct.
 Transistor protection, output in class B amplifiers, J. R. I. Piper, 77 Feb.
 Triangle generator, voltage controlled, J. W. Howden, 540 Nov.
 — /square generator, voltage-controlled, R. J. Tidey, 239 May
 Triangular waveform generator, H. Macdonald, 77 Feb.
 — — — — —, constant-amplitude, D. J. Price, 348 July
 Triggered single-shot, K. J. Montgomery, 139 Mar.
 Tuner, touch controlled, J. W. Richter, 475 Oct.
 Tuners and i.f. strips, matching unit, A. Clements, 18 Jan.
 Ultra-slow function generator, N. S. Nicola, 139 Mar.
 Variable-gain volume control, A. Jenkins, 186 Apr.
 Voltage-controlled filter and oscillator, D. G. Malham, 443 Sept.
 — — — — — high-pass filter, D. G. Malham, 349 July
 — — — — — triangle generator, J. W. Howden, 540 Nov.
 — — — — — /square generator, R. J. Tidey, 239 May
 — — — — — dropper, P. Rice, 274 June
 — — — — — stabilizer, simple, P. S. Ewer, 366 Aug.
 Volume control, variable gain, A. Jenkins, 186 Apr.
 Waveform generator, constant-amplitude triangular, D. J. Price, 348 July
 Wien bridge oscillator, L. D. Thomas, 275 June
 Zero current zener reference, J. Double, 475 Oct.
 — — — — — marking of a.c. waveforms, T. Palmer, 185 Apr.

CIRCUITRY & CIRCUIT DESIGN

A.M. receivers, noise silencer for, D. A. Tong, 483 Oct.
 Amateur transceiver, 10-80 metres, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Corrections*, 480 Oct.
 Amplifier for muscle voltages, simple, R. E. George, 495 Oct., *Correction*, 544 Nov.
 — — — — —, special-purpose, W. T. Cocking, 283 June
 — — — — —, universal meter, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.
 Amplifiers, low-noise audio, H. P. Walker, 233 May, *Letters*, 388 Aug., 520 Nov., 575 Dec.
 Another PAL decoder, A. Becker, 26 Jan.
 Audio amplifier, high-power, R. B. H. Becker, 79 Feb., *Letters*, 114 Mar., 226 May
 — — — — — Amplifiers, low-noise, H. P. Walker, 233 May, *Letters*, 388 Aug.
 — — — — — mixer, modulated integrated circuit, J. H. Evans & P. Williams, 564 Dec.
 — — — — — pre-amplifier using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.
 Automatic telephone exchange, miniature, G. F. Goddard, 90 Feb. Modifications, P. F. Gascoyne, 194 Apr., *Letters*, 177 Apr., 265 June
 Battery saving circuit for portable communication receivers, D. A. Tong, 124 Mar.
 Calculator, Wireless World desk, R. Alexander & B.

Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.
 Circards, J. Carruthers, J. H. Evans, J. Kinsler & P. Williams — 1: Basic active filters, 469 Oct., 2: Switching circuits, 514 Nov., 3: Waveform generators, 578 Dec.
 Communication receivers, battery saving circuit for portables, D. A. Tong, 124 Mar.
 Constant-current source, high-voltage, D. A. Williams, 29 Jan.
 Current-limited power supply, A. Royston, 67 Feb., *Corrections*, 110 Mar., 424 Sept.
 D.C. motors, towards better control of small, P. L. Hollingberry, 333 July
 — — — — — scope, trace quadrupler, D. Bollen, 204 May, *Letters*, 479 Oct.
 Decibel meter, linear, J. H. Smith, 488 Oct.
 Desk calculator, Wireless World, R. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.
 Digital and analogue dividers, P. R. Darrington, 529 Nov.
 — — — — — display using an oscilloscope, C. Attenborough, 586 Dec.
 Displaying phasor diagrams, A. R. Carruthers & J. H. Evans, 381 Aug.
 Distortion monitor, portable, J. L. Linsley Hood, 306 July, *Correction*, 480 Oct.
 Dividers, digital and analogue, P. R. Darrington, 529 Nov.
 Doppler radar with sense, K. Holford, 535 Nov.
 Dual-trace oscilloscope unit, W. T. Cocking, 19 Jan.
 Electric heater control, R. M. Marston, 287 June, *Letters*, 480 Oct.
 — — — — — multimeter, simple, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.
 Experimental electronic electricity meter, L. A. Triogga, 33 Jan.
 Experiments with operational amplifiers, G. B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., *Letters*, 387 Aug., 480 Oct.
 F.E.T., junction, as a voltage-controlled resistance, R. M. Lea, 337 July, 394 Aug.
 F.M. tuner design — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July.
 Feedforward error control, 232 May
 Free roving machine, M. F. Huber, 593 Dec.
 Frequency meter, linear, D. Anderson, 38 Jan.
 — — — — — synthesizers, J. R. Philpott, 269 June
 Function generator, non-linear, H. McPherson, 485 Oct.
 Generator, variable pulse rate, D. T. Smith, 137 Mar.
 — — — — —, white-noise, H. R. Beastall, 127 Mar., *Letters*, 223 May, 264 June
 Hand-portable transceiver, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.
 High-power audio amplifier design, R. B. H. Becker, 79 Feb., *Letters*, 114 Mar., 226 May
 — — — — — voltage constant-current source, D. A. Williams, 29 Jan.
 I.C. peak programme meter, L. Nelson-Jones, 515 Nov.
 Integrated circuit audio mixer, modulated, J. H. Evans & P. Williams, 564 Dec.
 Junction f.e.t. as a voltage-controlled resistance, R. M. Lea, 337 July, 394 Aug.
 — — — — — f.e.t.s., use of, L. Unsworth, 219 May
 Linear decibel meter, J. H. Smith, 488 Oct.
 — — — — — frequency meter, D. Anderson, 38 Jan.
 Linearity of the transistor amplifier, W. T. Cocking, 210 May
 Low-impedance microphone pre-amplifier, J. M. Howells & J. R. Jones, 36 Jan.
 — — — — — noise audio amplifiers, H. P. Walker, 233 May, *Letters*, 388 Aug., 520 Nov., 575 Dec.
 Meter amplifier, universal, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.
 — — — — —, i.c. peak programme, L. Nelson-Jones, 515 Nov.
 — — — — —, linear frequency, D. Anderson, 38 Jan.
 — — — — —, recording level and a.g.c., J. M. Bryant, 169 Apr.
 — — — — —, sound pressure-level, J. L. Linsley Hood, 167 Apr.
 Microphone pre-amplifier, low impedance, J. M. Howells & J. R. Jones, 36 Jan.
 Miniature automatic telephone exchange, G. F. Goddard, 90 Feb. Modifications, P. F. Gascoyne, 194 Apr., *Letters*, 177 Apr., 265 June
 Mobile/portable power unit for h.f. transceiver, D. R. Bowman, 601 Dec.
 Modulated integrated circuit audio mixer, J. H. Evans & P. Williams, 564 Dec.
 Multimeter, simple electronic, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.
 Multivibrators with seven-decade range in period, D. T. Smith, 85 Feb., *Letters*, 265 June
 Muscle voltages, simple amplifier for, R. E. George, 495 Oct., *Correction*, 544 Nov.
 Noise reduction, tape, J. R. Stuart, 104 Mar., *Letters*, 266 June
 — — — — — silencer for a.m. receivers, D. A. Tong, 483 Oct.
 Non-linear function generator, H. McPherson, 485 Oct.
 Operational amplifiers, experiments with, G. B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., *Letters*, 387 Aug., 480 Oct.

Oscillators, temperature stabilization, D. A. Tong, 41 Jan.
 Oscilloscope unit, dual-trace, W. T. Cocking, 19 Jan.
 PAL decoder, A. Becker, 26 Jan.
 Peak programme meter, L. Nelson-Jones, 515 Nov.
 Phase sensitive detector, K. L. Smith, 367 Aug.
 Phasor diagrams, displaying, A. R. Carruthers & J. H. Evans, 381 Aug.
 Photographing television pictures, R. E. Knight & D. J. Bryan, 290 June
 Portable communication receivers, battery saving circuit, D. A. Tong, 124 Mar.
 — — — — — distortion monitor, J. L. Linsley Hood, 306 July, *Correction*, 480 Oct.
 Power supply, current-limited, A. Royston, 67 Feb., *Corrections*, 110 Mar., 424 Sept.
 — — — — — unit for h.f. transceiver, mobile/portable, D. R. Bowman, 601 Dec.
 Pre-amplifier, audio, using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.
 — — — — —, low-impedance for microphone, J. M. Howells & J. R. Jones, 36 Jan.
 Pulse-rate generator, variable, D. T. Smith, 137 Mar.
 Radar, Doppler with sense, K. Holford, 535 Nov.
 Radio reception, synchronous detection in, Pat Hawker, 419 Sept., 525 Nov., *Letters*, 523 Nov.
 Receivers, noise silencer for a.m., D. A. Tong, 483 Oct.
 Recording level meter and a.g.c., J. M. Bryant, 169 Apr.
 Roving machine, free, M. F. Huber, 593 Dec.
 Scope, d.c., trace quadrupler, D. Bollen, 204 May, *Letters*, 479 Oct.
 Seven-decade range in period multivibrators, D. T. Smith, 85 Feb., *Letters*, 265 June
 Simple amplifier for muscle voltages, R. E. George, 495 Oct., *Correction*, 544 Nov.
 — — — — — electronic multimeter, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.
 Sound adaptors for television, 65 Feb.
 — — — — — pressure-level meter, J. L. Linsley Hood, 167 Apr.
 Special-purpose amplifier, W. T. Cocking, 283 June
 Synchronous detection in radio reception, Pat Hawker, 419 Sept., 525 Nov., *Letters*, 523 Nov.
 Synthesizers, frequency, J. R. Philpott, 269 June
 T.T.L. Trigger circuits, H. A. Cole, 31 Jan., *Letters*, 73 Feb., 116 Mar.
 Tape noise reduction, J. R. Stuart, 104 Mar., *Letters*, 266 June
 Telephone exchange, miniature automatic, G. F. Goddard, 90 Feb., Modifications, P. F. Gascoyne, 194 Apr.
 Television pictures, photographing, R. E. Knight & D. J. Bryan, 290 June
 — — — — — sound adaptors, 65 Feb.
 Temperature stabilization of oscillators, D. A. Tong, 41 Jan.
 Towards better control of small d.c. motors, P. L. Hollingberry, 333 July
 Trace quadrupler for d.c. scopes, D. Bollen, 204 May, *Letters*, 479 Oct.
 Transceiver, amateur, 10-80 metre, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Corrections*, 480 Oct., Power unit 601 Dec.
 — — — — —, hand-portable, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.
 Transistor amplifier, linearity of the, W. T. Cocking, 210 May
 Trigger circuits, t.t.l., H. A. Cole, 31 Jan., *Letters*, 73 Feb., 116 Mar.
 Tuner design, f.m. — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July
 Ubiquitous phase sensitive detector, K. L. Smith, 367 Aug
 Universal meter amplifier, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.
 Using junction f.e.t.s, L. Unsworth, 219 May
 Variable pulse-rate generator, D. T. Smith, 137 Mar.
 White-noise generator, H. R. Beastall, 127 Mar., *Letters*, 223 May, 264 June
 Wireless World desk calculator, R. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.

COMMUNICATIONS

Aerial, h.f. hybrid, T. A. Lindsey, 141 Mar.
 Amateur transceiver, 10-80 metre, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Corrections*, 480 Oct.
 Another PAL decoder, A. Becker, 26 Jan.
 Battery saving circuit for portable communications receivers, D. A. Tong, 124 Mar.
 Beacon system, British Isles v.h.f., Jack Hum, 491 Oct.
 Cheap, stable local oscillator, 218 May
 Doppler radar with sense, K. Holford, 535 Nov.
 Fixed aerial for satellite reception, J. M. Osborne, 335 July
 Graphical analysis of pulses on lines, B. L. Hart, 427 Sept., *Letters*, 576 Dec.
 H.F. aerial, hybrid, T. A. Lindsey, 141 Mar.
 H.F. transceiver, mobile/portable power unit for, D. R. Bowman, 601 Dec.

- Hand-portable transceiver, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.
- Local oscillator, cheap, stable, 218 May
- Medium waves, s.s.b. on, G. Wareham, 358 Aug., *Letters*, 476 Oct., 523 Nov.
- Noise silencer for a.m. receivers, D. A. Tong, 483 Oct.
- PAL decoder, A. Becker, 26 Jan.
- Portable communication receiver, battery saving circuit, D. A. Tong, 124 Mar.
- Pulses on lines, graphical analysis of, B. L. Hart, 427 Sept., *Letters*, 576 Dec.
- Power unit for h.f. transceiver, mobile/portable, D. R. Bowman, 601 Dec.
- Radar, Doppler with sense, K. Holford, 535 Nov.
- Radio reception developments, 445 Sept.
- , synchronous detection in, Pat Hawker, 419 Sept., 525 Nov., *Letters*, 523 Nov.
- Reshaping information to suit the channel, 320 July
- S.S.B. on medium waves?, G. Wareham, 358 Aug., *Letters*, 476 Oct., 523 Nov.
- Satellite reception, fixed aerial for, J. M. Osborne, 335 July
- Synchronous detection in radio reception, Pat Hawker, 419 Sept., 525 Nov., *Letters*, 523 Nov.
- Telephone exchange, miniature automatic, G. F. Goddard, 90 Feb., Modifications, P. F. Gascoyne, 194 Apr. *Letters*, 177 Apr., 265 June
- Transceiver, amateur, 10-80 metre, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Corrections*, 480 Oct.
- , hand-portable, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.
- V.H.F. beacon system, British Isles, Jack Hum, 491 Oct.
- ### COMPUTING
- Analog recursive computer, R. J. Lamden, 487 Oct.
- Digital and analogue dividers, P. R. Darrington, 529 Nov.
- , display using an oscilloscope, C. Attenborough, 586 Dec.
- Electronic retina, N. A. Singer, 161 Apr.
- Graphical analysis of pulses on lines, B. L. Hart, 427 Sept., *Letters*, 576 Dec.
- Logic circuits, how to simplify, N. Darwood, 173 Apr.
- ### CONSTRUCTIONAL DESIGNS
- A.M. receivers, noise silencer for, D. A. Tong, 483 Oct.
- Amateur transceiver, 10-80 metre, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Corrections*, 480 Oct.
- Power unit, 601 Dec.
- Amplifier for muscle voltages, simple, R. E. George, 495 Oct., *Correction*, 544 Nov.
- , universal meter, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.
- Audio amplifier, high-power, R. B. H. Becker, 79 Feb., *Letters*, 114 Mar., 226 May
- , Mixer, modulated integrated circuit, J. H. Evans & P. Williams, 564 Dec.
- , Pre-amplifier using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.
- Battery saving circuit for portable communication receivers, D. A. Tong, 124 Mar.
- Calculator, Wireless World desk, R. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.
- Communication receivers, battery saving circuit for portables, D. A. Tong, 124 Mar.
- Constant-current source, high voltage, D. A. Williams, 29 Jan.
- Current-limited power supply, A. Royston, 67 Feb., *Corrections*, 110 Mar., 424 Sept.
- D. C. 'scopes, trace quadrupler, D. Bollen, 204 May, *Letters*, 479 Oct.
- Decibel meter, linear, J. H. Smith, 488 Oct.
- Desk Calculator, Wireless World, R. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.
- Displaying phasor diagrams, A. R. Carruthers & J. H. Evans, 381 Aug.
- Distortion monitor, portable, J. L. Linsley Hood, 306 July, *Correction*, 480 Oct.
- Dual-trace oscilloscope unit, W. T. Cocking, 19 Jan.
- Electric heater control, R. M. Marston, 287 June, *Letters*, 480 Oct.
- Electronic electricity meter, experimental, L. A. Trinogga, 33 Jan.
- , multimeter, simple, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.
- Free roving machine, M. F. Huber, 593 Dec.
- Frequency meter, linear, D. Anderson, 38 Jan.
- Generator, white-noise, H. R. Beastall, 127 Mar., *Letters*, 223 May, 264 June
- H.F. transceiver, mobile/portable power unit for, D. R. Bowman, 601 Dec.
- Hand-portable transceiver, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.
- High-power audio amplifier design, R. B. H. Becker, 79 Feb., *Letters*, 114 Mar., 226 May
- , voltage constant-current source, D. A. Williams, 29 Jan.
- Horn loudspeaker, J. Greenbank, 14 Jan.
- I.C. peak programme meter, L. Nelson-Jones, 515 Nov.
- Integrated circuit audio mixer, modulated, J. H. Evans & P. Williams, 564 Dec.
- Linear decibel meter, J. H. Smith, 488 Oct.
- , frequency meter, D. Anderson, 38 Jan.
- Loudspeaker enclosure, transmission-line, A. R. Bailey, 215 May, *Letters*, 477 Oct.
- Low-impedance microphone pre-amplifier, J. M. Howells & J. R. Jones, 36 Jan.
- Meter amplifier, universal, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.
- , i.c. peak programme, L. Nelson-Jones, 515 Nov.
- , linear decibel, J. H. Smith, 488 Oct.
- , frequency, D. Anderson, 38 Jan.
- , recording level and a.g.c., J. M. Bryant, 169 Apr.
- , sound pressure-level, J. L. Linsley Hood, 167 Apr.
- Microphone pre-amplifier, low impedance, J. M. Howells & J. R. Jones, 36 Jan.
- Mobile/portable power unit for h.f. transceiver, D. R. Bowman, 601 Dec.
- Modulated integrated circuit audio mixer, J. H. Evans & P. Williams, 564 Dec.
- Multimeter, simple electronic, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.
- Muscle voltages, simple amplifier for, R. E. George, 495 Oct., *Correction*, 544 Nov.
- Noise silencer for a.m. receivers, D. A. Tong, 483 Oct.
- Oscilloscope unit, dual-trace, W. T. Cocking, 19 Jan.
- Peak programme meter, i.c., L. Nelson-Jones, 515 Nov.
- Phasor diagrams, displaying, A. R. Carruthers & J. H. Evans, 381 Aug.
- Portable communication receivers, battery saving circuit, D. A. Tong, 124 Mar.
- , distortion monitor, J. L. Linsley Hood, 306 July, *Correction*, 480 Oct.
- Power supply, current-limited, A. Royston, 67 Feb., *Correction*, 110 Mar., 424 Sept.
- Power unit for h.f. transceiver, mobile/portable, D. R. Bowman, 601 Dec.
- Pre-amplifier, audio, using operational amplifier techniques, D. Meyer, 309 July, *Letters*, 479 Oct., 575 Dec., *Correction*, 544 Nov.
- , low-impedance for microphone, J. M. Howells & J. R. Jones, 36 Jan.
- Receivers, noise silencer for a.m., D. A. Tong, 483 Oct.
- Recording level meter and a.g.c., J. M. Bryant, 169 Apr.
- Roving machine, free, M. F. Huber, 593 Dec.
- 'Scopes, d.c., trace quadrupler, D. Bollen, 204 May, *Letters*, 479 Oct.
- Simple amplifier for muscle voltages, R. E. George, 495 Oct., *Correction*, 544 Nov.
- , electronic multimeter, J. L. Linsley Hood, 279 June, *Addition*, 319 July, *Letters*, 388 Aug.
- Sound pressure-level meter, J. L. Linsley Hood, 167 Apr.
- Telephone exchange, miniature automatic, G. F. Goddard, 90 Feb., Modifications, P. F. Gascoyne, 194 Apr. *Letters*, 177 Apr., 265 June
- Trace quadrupler for d.c. 'scopes, D. Bollen, 204 May, *Letters*, 479 Oct.
- Transceiver, amateur, 10-80 metre, D. R. Bowman, 256 June, 325 July, 371 Aug., 437 Sept., *Corrections*, 480 Oct.
- , hand-portable, D. A. Tong, 154 Apr., *Corrections*, 285 June, 424 Sept.
- Transmission-line loudspeaker enclosure, A. R. Bailey, 215 May, *Letters*, 477 Oct.
- Universal meter amplifier, A. J. Ewins, 61 Feb., *Letters*, 175 Apr.
- White-noise generator, H. R. Beastall, 127 Mar., *Letters*, 223 May, 264 June
- Wireless World desk calculator, R. Alexander & B. Crank, 406 Sept., 456 Oct., *Letters*, 575 Dec.
- ### DOMESTIC EQUIPMENT
- Another PAL decoder, A. Becker, 26 Jan.
- Cassette tape recorder decks, stereo, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June
- , video recorders, magnetic-tape, 580 Dec.
- Domestic receiver survey, 464 Oct.
- , video recorder, 435 Sept., *Letters*, 523 Nov.
- F.M. tuner design — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July
- Horn loudspeaker — Mk II, John Greenbank, 14 Jan.
- Long-playing records, video, 474 Oct.
- Loudspeaker enclosure survey, S. Kelly, 552 Nov., *Corrections*, 594 Dec.
- , transmission line, A. R. Bailey, 215 May, *Letters*, 477 Oct.
- , horn — Mk II, John Greenbank, 14 Jan.
- Magnetic-tape cassette video recorders, 580 Dec.
- PAL decoder, A. Becker, 26 Jan.
- Receiver survey, domestic, 464 Oct.
- Recorder, domestic video, 435 Sept., *Letters*, 523 Nov.
- Records, video long-playing, 474 Oct.
- Sound adaptors for television, 65 Feb.
- Stereo cassette tape recorder decks, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June
- Survey, loudspeaker-enclosure, S. Kelly, 552 Nov., *Corrections*, 594 Dec.
- TV sound — the poor relation, J. C. G. Gilbert, 16 Jan., *Letters*, 114 Mar.
- Tape recorder decks, stereo cassette, Brian Crank, 129 Mar., 187 Apr., *Letters*, 264 June
- Television sound adaptors, 65 Feb.
- Transmission-line loudspeaker enclosure, A. R. Bailey, 215 May, *Letters*, 477 Oct.
- Tuner design, f.m. — 12 months later, L. Nelson-Jones, 179 Apr., *Letters*, 318 July
- Video long-playing records, 474 Oct.
- , recorder, domestic, 435 Sept., *Letters*, 523 Nov.
- , recorders, magnetic tape cassette, 580 Dec.
- ### EDITORIALS
- Appreciation; apology; appeal, 305 July
- Broadcasting — retrospect and prospect, 505 Nov.
- Editorial conventions, 405 Sept.
- Electronic calculators, 357 Aug.
- Electronics and telephone exchanges, 255 June
- , education or vocational training? 203 May
- Exhibitions — general or specialized, 153 Apr.
- Information retrieval, 455 Oct.
- Is the manufacturer always right? 103 Mar.
- Licence for what? 1 Jan.
- Walter Cocking retires, 53 Feb.
- ### EDUCATION & TRAINING
- Batteries, metal-air, 541 Nov.
- Capacitor, high voltage, 113 Mar.
- Circards, J. Carruthers, J. H. Evans, J. Kinsler & P. Williams, 1: Basic active filters, 469 Oct., 2: Switching circuits, 514 Nov., 3: Waveform generator, 578 Dec.
- Dimensional display, unified, R. N. Baldock, 117 Mar.
- Doppler effect, "Cathode Ray", 240 May, 267 June, *Letters*, 387 Aug., 423 Sept., 477 Oct., 523 Nov.
- Educational television network, Aubrey Harris, 87 Feb.
- Experiments with operational amplifiers, G. B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., *Letters*, 387 Aug., 480 Oct.
- Function generator, non-linear, H. McPherson, 485 Oct.
- Graphical analysis of pulses on lines, B. L. Hart, 427 Sept.
- How to simplify logic circuits, N. Darwood, 173 Apr.
- Instant intelligence, the mirage of, M. B. Hawton, 294 June
- Junction f.e.t.s., use of, L. Unsworth, 219 May
- Logic circuits, how to simplify, N. Darwood, 173 Apr.
- Metal-air batteries, 541 Nov.
- Mirage of instant intelligence, M. B. Hawton, 294 June
- Non-linear function generator, H. McPherson, 485 Oct.
- Operational amplifiers, experiments with, G. B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., *Letters*, 387 Aug., 480 Oct.
- Pulses on lines, graphical analysis of, B. L. Hart, 427 Sept.
- Simplifying logic circuits, N. Darwood, 173 Apr.

Television network, educational, Aubrey Harris, 87 Feb.

Unified dimensional display, R. N. Baldock, 117 Mar.
Using junction f.e.t.s, L. Unsworth, 219 May

EXHIBITION REPORTS

Audio Fair, London — Review, 595 Dec.

Communications '72, 376 Aug., List of exhibitors, 282 June

Farnborough-Europe '72, 481 Oct.

IEA show, 341 July, exhibitors at, 246 May
I.E.E.E. show New York, 243 May

Paris components show, 276 June
Physics Exhibition, notes from the, 229 May

Radio reception developments, 445 Sept.
Reshaping information to suit the channel, 320 July

Sonex 72, 227 May, preview, 143 Mar.

LETTERS TO THE EDITOR

ASP strikes again, P. W. van der Walt, 265 June
Amateur record?, D. H. Johnson, 223 May
Automatic telephone exchange, N. Monk, 117 Apr., G. F. Goddard, 265 June

Baxandall speaker, T. Magchielse, 223 May, P. J. Baxandall, 316 July
Bootstrapping, C. R. Cathles, 225 May, H. P. Walker, 423 Sept.

Cassettes and cartridges, L. F. Odell, 523 Nov.
Ceramic pickup performance, G. H. Baker, 11 Jan.

Desk calculator construction, D. H. Meech, 575 Dec.
Differential discriminator circuits, R. W. Penny, 12 Jan., H. A. Cole, 73 Feb.

Digital frequency meter mods, J. Gardner, 13 Jan.
Displaying frequency digitally, J. A. Titus, 115 Mar., H. F. Lewis, 226 May

Doppler effect, P. J. Unwin, A. F. Jervis, 387 Aug., J. E. Foggitt, 423 Sept., H. D. Harwood, L. Gray, 477 Oct., "Cathode Ray", 523 Nov.

Electric heater control, M. J. Shilling, 480 Oct.
Electrostatic headphones, J. Halliday, 9 Jan., P. D. Harvey, 72 Feb.

F.M. tuner bandwidth, J. E. A. Fison, 10 Jan.
— instability, R. Ellis, 318 July
Free bump testing, D. M. Willoughby, 73 Feb.
Frequency response of discs, S. W. Davies, 116 Mar.

Graphical analysis of pulses on lines, R. C. V. Macario, 576 Dec.

High-load transistor voltage amplifier, G. W. Short, 521 Nov.
— power audio amplifier, G. N. Patchett, R. B. H. Becker, 114 Mar., A. G. Jones, 226 May
History repeats?, R. E. Smith, 424 Sept.
Horn loudspeakers, S. W. Gilbert, 72 Feb., 116 Mar.
Hydrokinetic interference, C. D. Newman, 116 Mar.

Illegal listening, R. Cox, 266 June, T. H. Patinson, 389 Aug.
Imported equipment, S. Braidford, 176 Apr.
Incremental computer, W. F. Lovering & R. E. H. Bywater, 177 Apr.

Ingenious tuning indicator, M. Gavins, 318 July

Karnaugh map display, A. Potton, 319 July

Liniac, P.W. van der Walt, 11 Jan., H. Harper, 115 Mar., B.J.C. Burrows, 225 May, P.W. van der Walt, 265 June

Linking schools with industry, P.D. Noakes, 478 Oct.
Low-cost horn loudspeaker, D.R. Schaller, 389 Aug.
— noise audio amplifiers, J.L. Linsley Hood, 389 Aug., H.P. Walker, 520 Nov. Lunar epic, C.F. Green, 389 Aug., I. Buckner, 576 Dec.

Multiplex TV transmitters, L.W. Turner, 13 Jan.

Noise — white, pink, red, R.N. Baldock, 476 Oct., H.D. Harwood, 522 Nov.

Op-amp pre-amp, D.R.S. Hedgeland, 575 Dec.
Op-amp transfer characteristic, B.L. Hart, 387 Aug., T. Roddam, 480 Oct.

Power supply for f.m. tuner and decoder, P. Lacey, 10 Jan.
Pre-amp for ceramic pickups, B.J.C. Burrows, 10 Jan.
Preamplifier using op-amps, M. Dreyfus, 479 Oct.

Regulated power supplies, M.L.G. Oldfield, 520 Nov., Correction, 594 Dec.

S.S.B. on medium waves? G.M. Ward, 476 Oct.
Self-biasing class A power amplifier, W. Allison, 577 Dec.
Servicing help needed, A.J. Smale, 523 Nov.
Simple d.c. amplifier, P.D. Bailey, 424 Sept.
— electronic multimeter, D. Jones, 388 Aug.

Sinclair pocket calculator, C.M. Sinclair, 423 Sept.
Soldering aluminium alloy, W.S. Williams, 389 Aug.
Stereo cassette tape decks, H.V. Hempleman, 264 June
— decoder, phase locked loop, P. Lacey, 177 Apr.
Swept-frequency audio oscillator, R. Curling-Hope, 73 Feb.
Synchronous detector, H. Leopold, 523 Nov.

T.T.L. trigger circuits, D.B. Stiles, 73 Feb., M.F. Arnold, 116 Mar.

TV standards abroad, B.E. Graham Goodger, 176 Apr.
Tape messages by post, F.L. Devereux, 114 Mar.
— noise reduction, W.H. Myall, 266 June

Television sound quality, D.T.N. Williamson, G.J. King, 114 Mar.

Trace quadrupler, J.A. Titus, 479 Oct.
Transmission-line speakers, P.A. Sheppard, 477 Oct.
Tree effects in TV reception, M.G. Scroggie, 478 Oct., F.L. Devereux, 575 Dec.

Turntable construction, R.G. Brown, R. Ockleshaw, 115 Mar.

Universal meter amplifier, G. Hibbert, A.J. Ewins, 175 Apr.

Voltage controlled oscillators, D.B. Stiles, 265 June

White-noise generator, H. Sutcliffe, H.R. Beastall, Nicholas Lewis, 223 May, D.E.O'N. Waddington, 264 June

Why cassettes?, Ian Leslie, 264 June
Wow and flutter meter, B.J.C. Burrows, 226 May

MEASUREMENT & TEST

Amplifier for muscle voltages, simple, R.E. George, 495 Oct., Correction, 544 Nov.
—, universal meter, A.J. Ewins, 61 Feb., Letters, 175 Apr.

Constant-current source, high voltage, D.A. Williams, 29 Jan.

D.C. 'scopes, trace quadrupler, D. Bollen, 204 May, Letters, 479 Oct.

Decibel meter, linear, J.H. Smith, 488 Oct.
Digital and analogue dividers, P.R. Darrington, 529 Nov.
Distortion monitor, portable, J.L. Linsley Hood, 306 July, Correction, 480 Oct.
Dual-trace oscilloscope unit, W.T. Cocking, 19 Jan.

Electronic multimeter, J.L. Linsley Hood, 279 June, Addition, 319 July, Letters, 388 Aug.
Experiments with operational amplifiers, G.B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., Letters, 387 Aug., 480 Oct.

Frequency meter, linear, D. Anderson, 38 Jan.

High-power loudspeaker voice coils, working temperatures of, A.E. Falkus, 543 Nov.
— voltage constant-current source, D.A. Williams, 29 Jan.

I.C. peak programme meter, L. Nelson-Jones, 515 Nov.

Loudspeaker voice coils, working temperatures of high-power, A.E. Falkus, 543 Nov.

Meter amplifier, universal, A.J. Ewins, 61 Feb., Letters, 175 Apr.

—, i.c. peak programme, L. Nelson-Jones, 515 Nov.
—, linear decibel, J.H. Smith, 488 Oct.
—, frequency, D. Anderson, 38 Jan.
—, recording level and a.g.c., J.M. Bryant, 169 Apr.
—, sound pressure-level, J.L. Linsley Hood, 167 Apr.
Multimeter, simple electronic, J.L. Linsley Hood, 279 June, Addition, 319 July, Letters, 388 Aug.
Muscle voltages, simple amplifier for, R.E. George, 495 Oct., Correction, 544 Nov.

Operational amplifiers, experiments with, G.B. Clayton, 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov., Letters, 387 Aug., 480 Oct.

Oscilloscope unit, dual-trace, W.T. Cocking, 19 Jan.

Peak programme meter, i.c., L. Nelson-Jones, 515 Nov.
Phase sensitive detector, ubiquitous, K.L. Smith, 367 Aug.
Portable distortion monitor, J.L. Linsley Hood, 306 July, Correction, 480 Oct.

Recording level meter and a.g.c., J.M. Bryant, 169 Apr.
'Scopes, d.c., trace quadrupler, D. Bollen, 204 May, Letters, 479 Oct.

Solder tests, B.M. Allen, 75 Feb.
Sound pressure-level meter, J.L. Linsley Hood, 167 Apr.

Trace quadrupler for d.c. 'scopes, D. Bollen, 204 May, Letters, 479 Oct.

Ubiquitous phase sensitive detector, K.L. Smith, 367 Aug.
Universal meter amplifier, A.J. Ewins, 61 Feb., Letters, 175 Apr.

Working temperatures of high-power loudspeaker voice coils, A.E. Falkus, 543 Nov.

AUTHORS

Alexander, R. & Crank, B., 406 Sept., 456 Oct.
Allen, B.M., 75 Feb.
Anderson, D., 38 Jan.
Attenborough, C., 586 Dec.

Bailey, A.R., 215 May, Letters, 478 Oct.
Baldock, R.N., 117 Mar.
Beastall, H.R., 127 Mar., Letters, 224 May
Becker, A., 26 Jan.
Becker, R.B.H., 79 Feb., Letters, 115 Mar.
Bellis, F.A. & Jones, A.H., 432 Sept.
Bollen, D., 204 May, Letters, 479 Oct.
Bowman, D.R., 256 June, 325 July, 371 Aug., 437 Sept., 601, Dec.
Bryan, D.J. & Knight, R.E., 290 June
Bryant, J.M., 169 Apr.

Carruthers, A.R. & Evans, J.H., 381 Aug.
Carruthers, J., Evans, J.H., Kinsler, J. & Williams, P., 469 Oct., 514 Nov., 578 Dec.
"Cathode Ray", 240 May, 267 June, Letters, 388 Aug., 523 Nov.
Clayton, G.B., 272 June, 324 July, 391 Aug., 425 Sept., 524 Nov.
Cocking, W.T., 19 Jan., 210 May, 283 June.
Cole, H.A., 31 Jan.
Crank, B., 129 Mar., 187 Apr., Letters, 264 June
Crank, B. & Alexander, R., 406 Sept., 456 Oct.

Darrington, P.R., 529 Nov.
Darwood, N., 173 Apr.

Evans, J.H. & Carruthers, A.R., 381 Aug.
Evans, J.H., Kinsler, J., Williams, P., & Carruthers, J., 469 Oct., 514 Nov., 578 Dec.
Evans, J.H. & Williams, P., 564 Dec.
Ewins, A.J., 61 Feb., Letters, 175 Apr.

Falkus, A.E., 543 Nov.
Fellgett, P.B., 413 Sept.
Franklin, J., 28 Jan., 74 Feb., 126 Mar., 178 Apr., 238 May, 286 June, 350 July, 390 Aug., 418 Sept.

Gascoyne, P.F., 194 Apr.,
George, R.E., 495 Oct.
Gilbert, J.C.G., 16 Jan.
Goddard, G.F., 90 Feb.
Greenbank, J., 14 Jan.

Harris, A., 87 Feb.
Hart, B.L., 427 Sept.
Hawker, P., 419 Sept., 525 Nov.
Hawton, M.B., 294 June
Holford, K., 535 Nov.
Hollingberry, P.L., 333 July
Howells, J.M. & Jones, J.R., 36 Jan.
Huber, M.F., 593 Dec.
Hum, J., 491 Oct.

Jones, A.H. & Bellis, F.A., 432 Sept.
Jones, J.R. & Howells, J.M., 36 Jan.

Kelly, S., 552 Nov.
Kinsler, J., Williams, P., Carruthers, J., & Evans, J.H., 469 Oct., 514 Nov., 578 Dec.
Knight, R.E. & Bryan, D.J., 290 June

Lamden, R.J., 487 Oct.
Lea, R.M., 337 July, 394 Aug.
Linsley, T.A., 141 Mar.
Linsley Hood, J.L., 167 Apr., 279 June, 306 July, Letters, 388 Aug.

McPherson, H., 485 Oct.
Marston, R.M., 287 June, Letters, 480 Oct.
Meyer, D., 309 July, Letters, 479 Oct.

Nelson-Jones, L., 179 Apr., 515 Nov., Letters, 318 July

Osborne, J.M., 335 July

Peverett, A.M., 510 Nov.
Philpott, J.R., 269 June

Royston, A., 67 Feb.

Shorter, G., 2 Jan., 54 Feb.
Singer, N.A., 161 Apr.
Smith, D.T., 85 Feb., 137 Mar.
Smith, J.H., 488 Oct.
Smith, K.L., 367 Aug.
Stuart, J.R., 104 Mar., Letters, 266 June

Tong, D.A., 41 Jan., 124 Mar., 154 Apr., 483 Oct.
Trinogga, L.A., 33 Jan.

Unsworth, L., 219 May

"Vector", 102 Feb., 202 Apr., 304 June, 404 Aug., 504 Oct., 612 Dec.

Walker, H.P., 233 May, Letters, 520 Nov.
Wareham, G., 358 Aug., Letters, 476 Oct.
Williams, D.A., 29 Jan.
Williams, P., Carruthers, J., Evans, J.H. & Kinsler, J., 469 Oct., 514 Nov., 578 Dec.