

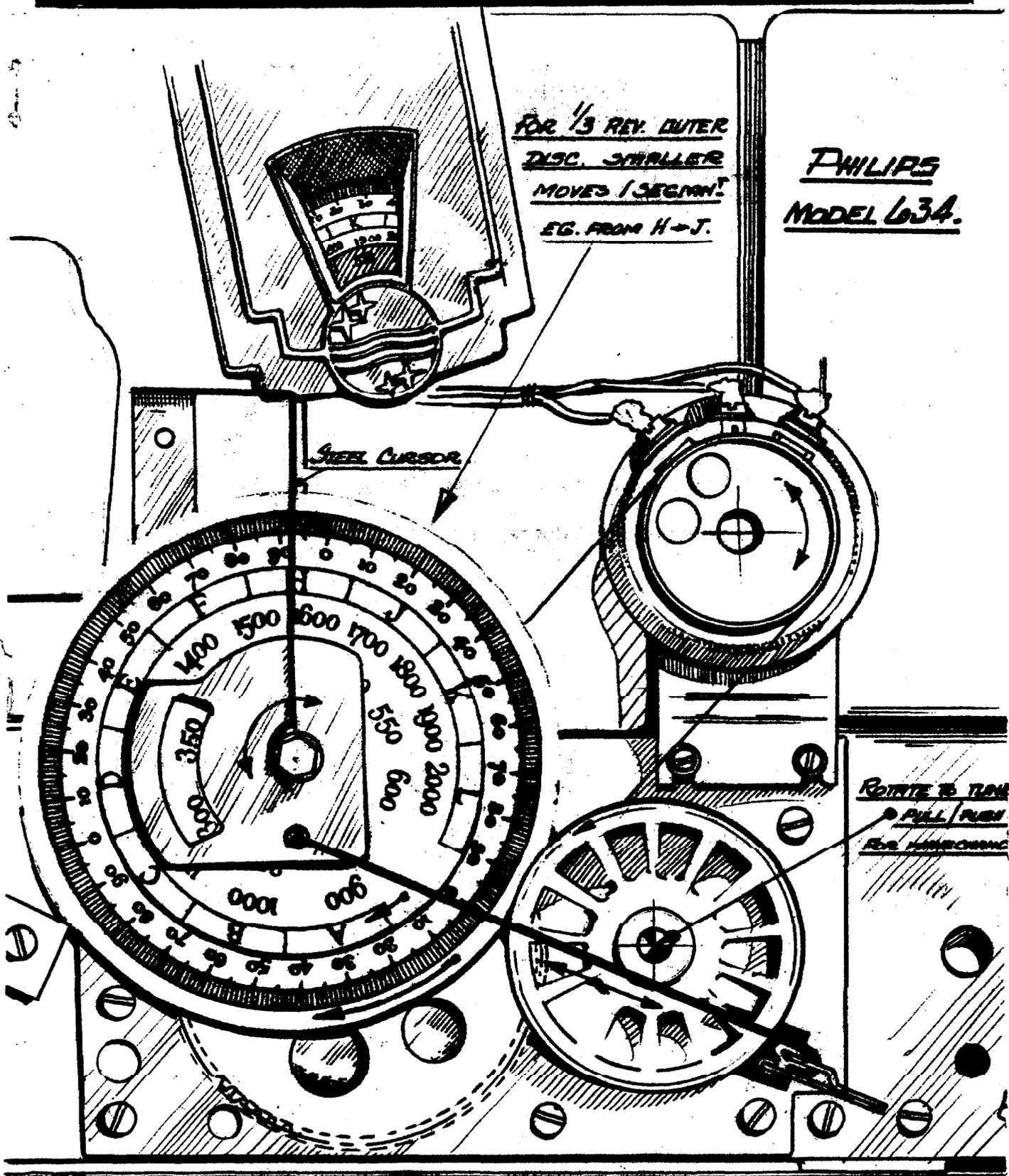
VINTAGE

# WIRELESS

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VOLUME 8. NUMBER 4

BULLETIN OF THE BRITISH VINTAGE WIRELESS SOCIETY



# IMPORTANT:

## Membership Renewal and the B.V.W.S./A.W.A. International Vintage Wireless Meeting

**FORM 'A'**. All members wishing to renew their subscription for the year April 1st 1984 to March 31st 1985 must fill in Section 'A'. If you are planning to come to the Harpenden Meeting on Sunday June 17th and wish to apply for tickets, then please also fill in Section 'B'. Enclose a cheque ( or BANKERS ORDER if resident Overseas ) for the total amount, payable to "BVWS" and send to :- Jonathan Hill, B.V.W.S., 14 Victoria Court, Kingsbridge Avenue, London W3 9AH. **N.B.** Entry to Harpenden will be by TICKET ONLY ( bought in advance ) and because of the expected high turn out with the visit of the A.W.A., each Member may bring 1 adult guest only. We appreciate that for many, Harpenden is a family outing, and those wanting to bring their children may do so free of charge, and should apply for 'child' tickets on the reverse of the form. Stalls (@£2) may also be booked using Form 'A'.

**FORM 'B'**. If you wish to participate in any ( or all ) of the events listed on Form 'B' you must complete it and return it with your cheque ( or BANKERS ORDER if resident Overseas ) for the total amount payable to "~~BRITISH VINTAGE WIRELESS SOCIETY~~ No:2 a/c" to the following address :- A.R.Constable, 1 The Ridings, Ealing, London W5 3BT.

**N.B.** Both Forms must be returned to the appropriate addresses no later than April 27th 1984

The special visit of the American Antique Wireless Association (A.W.A.) is now being organized by Lauren and Joyce Peckham. We have booked the Ivanhoe Hotel ( near the British Museum ) for the A.W.A. visitors. Any other members who also wish to stay at the hotel should contact it directly, although it is likely that by now there will be a shortage of accommodation. The address is : Ivanhoe Hotel, Bloomsbury Street, London WC1B 3QD. Tel: (01) 636 5601.

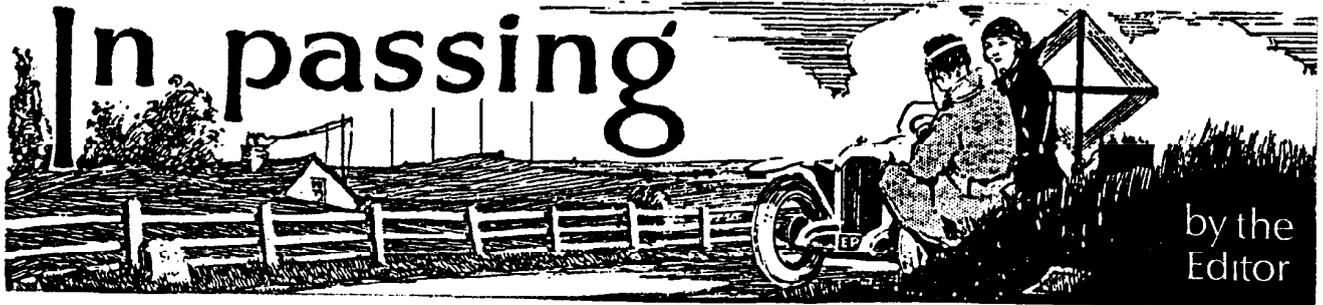
A coach ( or coaches ) will be hired for the whole of the 3 days to run between the Ivanhoe and the various events in London, Hertfordshire and Sussex and members of the B.V.W.S. who might want to join the coach at any time should make sure they fill in the appropriate section of Form 'B'.

The International Vintage Wireless Meeting is the first of its kind to be held in this country and it is hoped to be well supported by B.V.W.S., A.W.A. and some of the European Societies. Some events may of course be oversubscribed and we will then have to select on a first-come first-served basis. There will be definite limitations on the number of participants at the Science Museum on Saturday morning and we will be unable to accommodate any guests. During the rest of the 3 day event, members wishing to bring a guest should state this quite clearly on Form 'B' - at this stage it is impossible to anticipate the total attendance at any of the events, but please send in your applications promptly to help the organisers plan a successful meeting.

At Harpenden, the usual Annual General Meeting will not be held, but has been postponed until the Winter Wireless Meeting when elections etc. will take place in the normal way. Any Member who would like to give an illustrated talk during the 3 day event should write to Tony Constable as soon as possible. There will be at least two occasions when talks and/or film shows can be given :- at the Ivanhoe on Sunday Evening and at the Chalk Pits on Monday.

Special demonstrations will take place in the ante-room at Harpenden on the Sunday and Members wishing to participate with their own equipment should contact Ian Higginbottom who will co-ordinate the event. ( Address: 5 Templewood, Ealing, London W13. (01) 997 1594 ). The principal theme for demonstrations will be 'MARCONI EQUIPMENT' and we would like to have the finest examples of Marconi receivers available - domestic and WWI sets and ancillary equipment, advertising material, handbooks, photos etc. should be included to add colour and interest. We also hope to have a table devoted to those special reproduction items some members have made in recent years. A prize will be awarded to the best entry. If you wish to participate, include a description of your entry with Form 'B'.

Please look carefully at the Programme Sheet and complete your Application Forms as soon as possible.



I am sure that members will be pleased to hear that arrangements for our June events to welcome friends from the Antique Wireless Association of USA, as well as visitors from Europe, are now well in hand. With this issue we are enclosing a form for you to fill in if you wish to take part in various events which have been planned. We expect there will be a heavy demand for some of the events so the allocations of tickets must be on a first come -first served basis, although it is hoped that UK members will accept the idea of priority being given to visitors from overseas in the case of arrangements where space is limited- and where UK members will have other opportunities to visit in future. In this issue is a programme of the main events which Tony Constable, who has done a considerable amount of the organisational work, has produced. Please return the completed forms as soon as possible.

There will be changed arrangements for our Harpenden meeting this year which the organiser Jonathan Hill reports on in this issue. The "Swapmeet" will be a "ticket only" affair to keep out "gate-crashers" who take advantage of it each time without paying subscriptions as members. It is imperative, therefore, for those wishing to attend, to return the form sent out with this issue and apply for tickets. The same form is for renewal of your annual subscription- due on 1st April. This will be the last Bulletin which will be sent to those who fail to renew, so please send your subscription in good time. You will see that UK membership remains at £6, but the European subscription is now £7 and Worldwide to £8 to compensate for post cost increases.

We are holding our Annual Meeting and elections at the Winter meeting instead of the June Harpenden from now on.

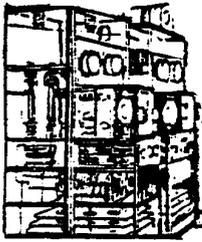
The last of the old-fashioned BBC transmitters in Britain are soon to be closed down and it is possible that some components, quite early ones, may be offered to the Society. We would appreciate if members would let us know whether they would wish to take part in a ballot for these parts if it is possible to acquire them. Some hard, unpaid work would be involved in transporting them as well as some expense, so we should like some feedback on the idea before exploring it further please.

Dave Brodie, to whom our thanks are due for sending his "Transatlantic Letter" for some years, has informed me that he must discontinue the letter but tells me that members who are interested in radio in the US are welcome to correspond with collectors there. Members finding themselves in the US on holiday will find radio museums in profusion at which they would find a welcome. A list can be provided for any member who would like one.

Did you know that although the BBC is giving up television broadcasts on 405 lines, there are still transmissions on just 48 lines - much like the ones transmitted on Baird's first mechanical sets ! Enthusiasts of the hobby are making their own transmitters as well as receivers and although the technology is primitive, there is nothing "Vintage" about the sets used, which mostly have transistor circuits. If members are interested, details can be obtained from the Narrow Bandwidth Television Association, 54, Park Drive, Hucknall, Nottingham.

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BVWS COPYRIGHT. Editor: Robert Hawes, 63, Manor Road, Tottenham, N17. London, OJH. Tel:01.808.2838. Society Chairman: David Read. Treasurer: Ian Higginbottom. Membership Secretary: Mike Kemp. Bulletin Artist: Norman Jackson. Newsletter Editor: Jonathan Hill, 14, Victoria Court, Kingsbridge Avenue, London W.3. Tel:01.993.1306. Secretariat: G. and J. Mitchell, Chute Lodge Cottage, Chute Forest, Nr. Andover.



# Editor's Postbag



## COSSOR INFORMATION

The date of the Cossor 77B in Bill Caten's collection ( Bulletin Vol.8.no.2.p 26) is 1940 or early 1941. The set started life in Nov/Dec 1938 as model 71 - a 4-v plus rectifier 3-wave AC superhet in a wood cabinet. In 1940 it went into an improved cabinet and became model 77 until wood supply became difficult and a moulded cabinet was introduced as 77B. Model 71 and its variants, like almost all Cossor AC superhets from 1938 until production ceased completely in 1941 contained a separate power pack. Early in 1940 legislation made it necessary to obtain a GPO permit to purchase valves with 10 watts or more dissipation, and as the power pack used a 2XP it became an embarrassment to Cossor, the retailer and the customer, so the valve was modified to bring it within the classification and it was given the number 2P. The 2XP was never again produced. The permit idea was a bit of bureaucratic nonsense :I suppose nobody in "high places " thought of the possibility of pushing up anode volts or putting two valves in parallel to build a transmitter for communicating with the enemy. I read in "Sounds Vintage" (Vol.5. no.5) that "GPO engineers collected amateur transmitting gear and any valve rated at 10 watts. They certainly did not do the latter as there were 150,000 Cossor sets scattered over the country fitted with the 2XP which would have kept them very busy. FRANK BRITAIN.

## GECOPHONE "SMOKERS' CABINET" SET

I read Ian Higginbottom's article with interest. I have a cabinet, given to me by a friend thirty years ago who was disposing of his 20's and thirties equipment. My cabinet contains a moving-iron speaker. There appears no evidence that the cabinet was anything other than a speaker. There are no modifications and the fret looks original. Were such speakers made by GEC, or did they sell off surplus cabinets ? There is no transfer on the cabinet. ALISTAIR JONES. ( Note from the Editor: Many of these cabinets are found without "works" , modified as cabinets for pipe-smokers gear and trinkets. Most retain the original transfers or there is evidence that these have been scuffed off or the whole case re-polished. No speaker cabinet of this kind appears ever to have been advertised by GEC and certainly a moving-iron speaker seems to late for it).

## 1935 MEMORY

About 40 years ago I was rummaging in a second hand shop and found a valve which I offered to purchase. Instead of telling me the price the shopkeeper insisted in was a special one: " It's a Variable Mule" . I decided not to buy it: it may have had stubborn qualities, I felt. ERNIE ROBERTS. (Note from the Editor: If any other readers have anecdotes, I should be glad to hear from them).

## PHILIPS 930A

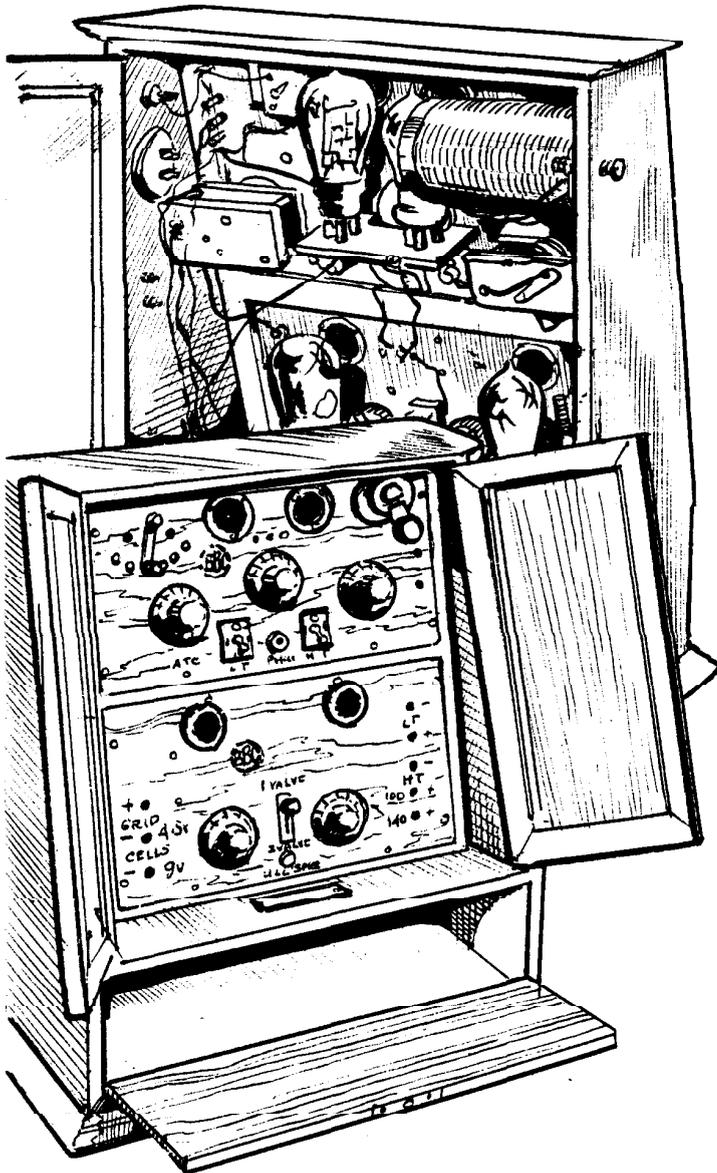
May I add one or two points to your article: (1) Those baffled by Philips' weird manner of drawing circuits may not realise that S5,6 and 7 is the tuning-coil and S8 is the reaction-coil which acts as a variometer. (2) The tuned circuit in the top left hand corner is only present in the 934A (presumably a special model for those who lived under the aerial at Hilversum) This wave-trap was also available as a matching unit called model 4180 .(3) You do not mention the curious feature of the waveband coverage, which is 200-2000 metres in three bands. I wonder what was receivable on the middle one ? (4) Does anyone know why the fret design is not quite the same as the Philips trademark ? Perhaps it was easier to mould or stronger ? I would also mention that the French call this set "the ham tin" which I prefer to " Cathedral". G.V. DIXON-NUTTALL.

## 2MT WRITTLE

I am currently researching 2MT Writtle and compiling a history and would be glad to have any personal reminiscences of the station, staff and site- especially any personal photographs. All letters will be answered and any photographs returned. TIM WANDER, 16, Darnay Rise, Melbourne, Chelmsford.

# "BBC" set -with a US touch

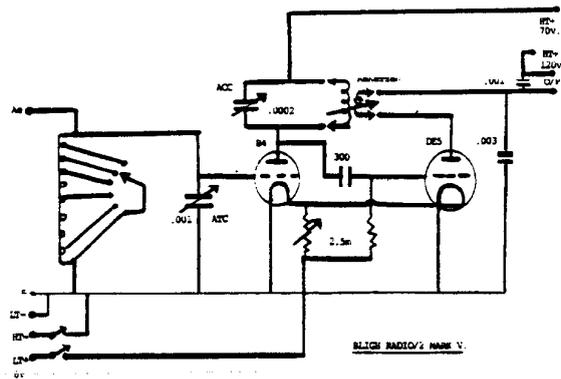
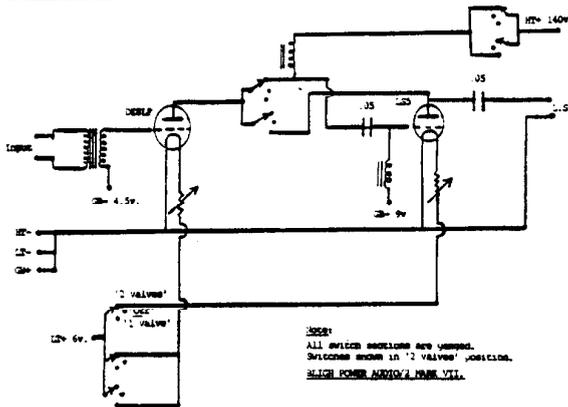
By Pat Leggatt



I have an interesting set in my collection consisting of a handsome upright mahogany cabinet in which are mounted two separate panels. The first is the Bligh Radio/2 Mark V which carries a BBC 'Type Approved' stamp and the P.O.no.2176; while the second is the Bligh Audio/2 Mark VII, with P.O no.4410. The two panels are of ebonite with a wood grain front finish which retain their colour and high-polish due to two front cabinet doors which have shielded them from ultra-violet light over the years.

The two panels are evidently designed for use, if desired, as separate self-contained units, in that the H.T., L.T. and GB engravings would identify adjacent front-projecting terminals, although in my own set the terminals have been replaced by screw heads, the panel connection being made at the rear. One or two features point to a fairly early date for this set. Firstly the "Type Approved" stamps indicate manufacture before mid 1924; secondly, there is no provision for volume control; thirdly, use of the terms "Aerial Tuning Condenser" (ATC) and "Anode Coupling Condenser" (ACC) did not persist beyond the early twenties; and lastly, the switched choice of "1 valve" or "Two valves" in the audio amplifier section for valve and battery economy also belongs to that period. I have no idea of the original valve line-up, except that the panel carries gauze inspection windows which indicate bright or semi-bright emitters. I have fitted the set with a six-volt combination: B4,DE5,DE9LF and L55 which seem to work well. I have been unable to find any reference to Bligh as a receiver manufacturer. The words "Radio" and "Audio" were not, I think, in very common use in England in the early days and I wonder whether this suggests that the set may have been a Europeanised version of an original American design. This possibility is given extra weight by the fact that the LT and HT switches are "Up" for "On" and "Down" for "Off". The circuitry of the radio and audio panels is shown in the diagrams. The radio section contains no surprises, the only noteworthy point being that the RF stage anode and reaction coils are separate plug-in components: the set I have contains only a long-wave pair. The fixed aerial coil can be tuned from 100kHz to 1.6 MHz with the stud switch and condenser. The Audio section is less conventional in that it incorporates anode choke coupling in both stages, with a third choke forming the output stage grid impedance. It is also fairly unusual to find the loudspeaker capacitance fed. With all these shunt chokes about, and transformer coupled input, it is no surprise to find that the amplifier

"BRC set with US touch" continued



frequency response is not exactly hi-fi. With reference to 1kHz, the response is down 3db at 500 Hz and down 10dB and 250 Hz ! But one must remember, of course, that this sort of response is a fair match with the moving-iron horn loudspeaker for which the set is designed. I should be grateful if anyone can tell me something about the origins of this set and whether my theory of a vaguely American parentage has any real foundation.

MEMBERS' ADVERTISEMENTS

Wanted: information on Wirek tape machine, also spools and information on the "Tape Writer" . Franz Jansen, Withuysstraat 95, s'Gravenhage 2523 GR Holland.

Wanted: Decca stereo Decola radiogram. For Sale: many pre and post-war radios, grams, valves. SAE for list. John Howes, 11 Crendon Park, Southborough, Tunbridge Wells.

For sale: I have recently published a book called " Goodnight Children, everywhere" which is a history of childrens' broadcasting in Britain. IAN HARTLEY, 252, Brooklands Road, Wythenshawe, Manchester.

For Sale: New extended stock of Service Sheets, "Traders" and manufacturers' data 1930-70. Good photocopy or some originals available. 50p per receiver plus SAE.

Enquiries welcomed for missing backs and mysteries- send photo and chassis details. John Narborough, 59, Roedale Road, Hollingdean, Brighton.

Wanted: Catalogue for "Britain can make it" exhibition or list of sets on display there. Jonathan Hill, 14, Victoria Court, Kingsbridge Avenue, London, W3. (01 993 1306).

Wanted: Drive unit for Sterling Dinkie horn speaker. Also wanted, knob for "Grid Leak" Pocketphone. Gordon Bussey, 64, Pampisford Road, Purley, Surrey.

For Sale: MetVick Cosmos Radiophone VR3 tuner and amplifier A3, ebonite panels with mounted components ( no valves) need restoration. Also oak console cabinet to match, barley-twist legs. Reg Dykes, 312, Carterhatch Lane, Enfield. (01 363 7494).

Disposal: Early Cossor Melody Maker, plug in coil type; Philips 630A and Ekco AC74.

Wanted: Circuit for 1930 Ultra ACP and details of Gecophone "Table Lamp" speaker or details of construction of outer ring, cone mounting etc. R. Jones, 2, Rose Avenue, Alvechurch, Worcs.

Wanted: for West Country Wireless Museum; Fultograph, early valve sets, small-screen pre-war TV sets. Robert Brain, Middle Huish Farm, Instow, Bideford . Devon.

Wanted: Cardboard chassis speaker (or parts) for Deutschen Kleinempfänger 1938. Norman Jackson, 5, Pyremont Road, Strand on the Green, London, W4.

Wanted: Bound volumes of 20's wireless magazines; transformers for Brownie 2v amp; chokes and condenser for Marconi RB10; Brown microphone amp; Pye M78F; Marconi or Gecophone wavemeter; 78 records Flotsam and Jetsam " Little Betty Bouncer" and dance band playing "On the Air" (to illustrate a talk to members). Robert Hawes, 63, Manor Road, Tottenham, N17. London, OJH. (01 808 2838). Cash or swaps.

MEMBERS ARE REMINDED THAT SUBSCRIPTIONS ARE DUE ON 1st APRIL AND THAT ENTRANCE TO THE HARPENDEN MEETING IN JUNE AND OTHER EVENTS OF THE SPECIAL WEEKEND WILL BE BY TICKET ONLY, BOOKED IN ADVANCE. There is limited room so please apply early.

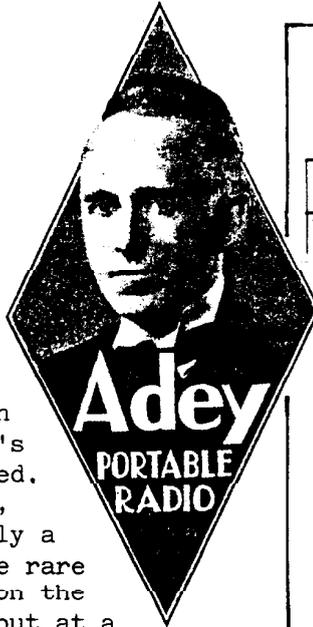
For sale: Share certificates of defunct wireless companies, 1924 and 1936. Robert Jenkins, Andover. (0264 57655).

Batteries: Members stuck for battery power supplies for two-volt receivers might find something suitable among things offered in Radiospares catalogue. They have small rechargeable "Cyclon" cells of three types, of from 2.5 to 25 amp- hour rating which cost from about £3 to £15 each. They are lead acid cells which should not be left discharged.

Gordon Bussey and Robert Hawes

# More on Adey

In the BVWS Bulletin of March 1979 David Read has already outlined the short history of the small firm founded by Horace Adey in 1924 which was wound up soon after the founder's death in 1935. As the author revealed, the company, which was London-based, turned out some unique products, only a few of which have survived to become rare wireless curiosities. The sets put on the market may have seemed "gimmicky", but at a time when mushrooming small firms often turned out crudely made sets to join in the boomtime of wireless, Adey demonstrated sound design and production techniques that were innovative. Along with his "Wireless Chair", his patent tuning keyswitch, his cigar-box receiver, his police set built in a Bobbies' helmet and his valve with a choke wound on the base, there were practical sets of good quality and performance which incorporated ideas ahead of their time. Since David Read's article appeared, some more information has come to light which gives details of most of the sets produced.



### CIRCUIT OF THE "ADEY" PORTABLE.

### THE "ADEY" KEY.

This key locks and unlocks the whole system of operation, also acts as a station selector and reaction control, and operates the long and medium waves.

When the set is not in use, the key is kept in a pocket inside the set.

**ADEY PORTABLE RADIO**  
 Showrooms and Office:  
**89 MORTIMER STREET, REGENT STREET, LONDON, W.1**  
 Telephone: LANGHAM 3258

## THE ADEY CIGAR BOX. PORTABLE.

Not a toy but a powerful set for headphone reception

Takes the place of Crystal Sets.

No aerial or earth required for local station use. Can be used for gramophone reproduction.

**PRICES.**  
 £2 15 0 Complete with valve and all batteries.  
 Headphones 12/6 extra.  
 Sizes 8" x 4 1/4" x 2 1/4". Weight 2 1/2 lbs.

### "ADEY PATENT HAT" LOUD SPEAKER

Build for clear reception, strong tone, etc. (Patent No. 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

**ADEY MORTIMER ST LONDON PATENT No. 324614**

### INTERNAL CONNECTIONS OF CHOKE

### POSITION

## ADEY SELF COUPLING VALVE

PRICE 6/6

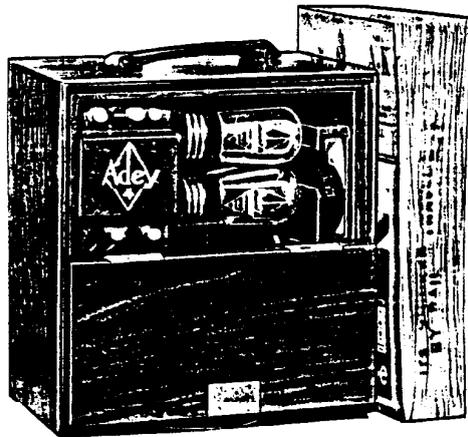
HOW THE NEW "ADEY" CHOKE MAY BE USED IN A SET WITH TWO H.F. STAGES

The Adey 4-valve portable was produced in October 1929 and production continued until 1932. The valves, mounted vertically, were not of the self-coupling type but a "Key" switch-jack was fitted. The tuning knob was on the right, top; wave change below speaker. 1930 saw the 1-valver headphone suitcase portable which continued until 1935. This did not use the self-coupling valves but had a "Key" with single-position switch. It was for medium-wave only and was in blue leathercloth, or rarely, red.

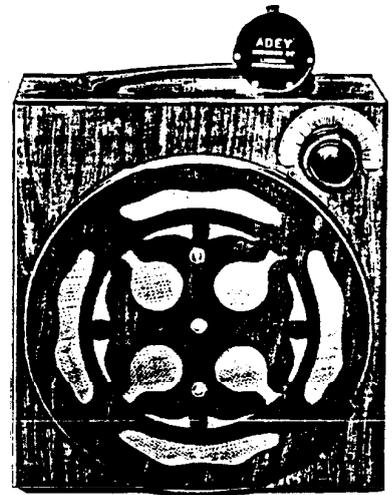
# As small as your hat *But...*

## ...amazing in its Power and Purity

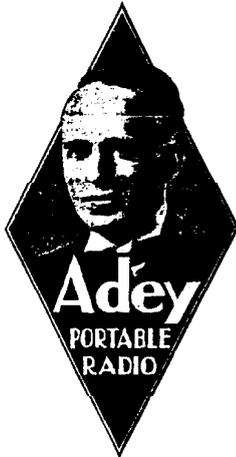
The ADEY PORTABLE is a super-efficient Four-Valve Receiver of advanced design, receiving main British and European stations on the Loudspeaker with a natural bell-like tone. Standard Sets can be fitted for Gramophone reproduction, and will give a sufficient volume of sound to fill a large concert hall! Yet the weight of this Set, complete with self-contained frame aerial and batteries, is only about 12½ lbs., and its size is little more than a hat! A triumph of British invention and British craftsmanship! A wonderful achievement by the Pioneers of Portable Radio!



The Adey Portable 4-Valve Set as compared with a telephone book.



8½"



AS SUPPLIED TO HIS MAJESTY'S GOVT.

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 A small H.T. Battery of great power and long life, fitted with instantaneous spring terminals instead of the old type of plug terminal.  
 The Cases are beautifully made, and attractive in design. Mounted on a turntable to ensure directional accuracy. The back of the Set is fitted with a lock and key.

**Standard model (4-valve)**

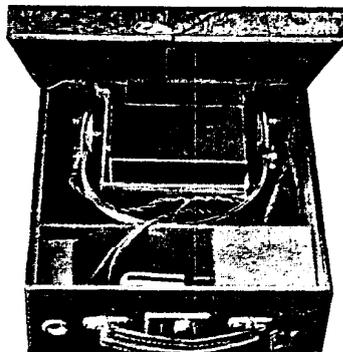
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The ADEY ONE-VALVE HEADPHONE SET  
**£3 17s. 6d.** complete.

The ADEY THREE-VALVE DOUBLE-WAVE HEADPHONE SET, style as per one-valve illustration.

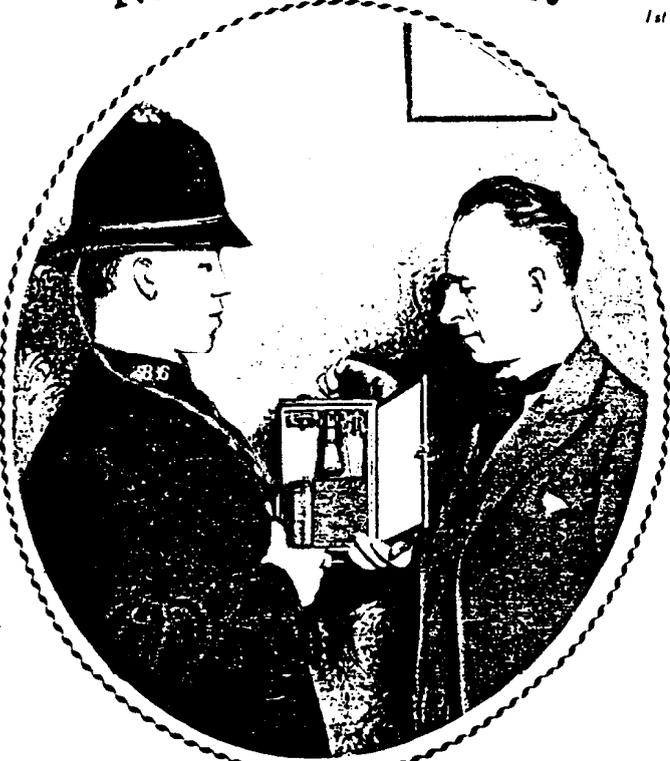
Price **£5** complete.

# Adey Portable Radio

The one-valve "Cigar Box" receiver (pictured right) was also produced in 1930. It too, had a single-position key switch and did not use the self-coupling valve. It is possibly the rarest of the Adey receivers. When it was launched, it was announced to the Press that a similar set was being developed for use by policeman on the beat but it is not known how far this idea went. (The Editor has one of these one-valvers and hopes to produce a feature for a forthcoming Bulletin on it. He would be grateful for any information which may help his research.) The Adey Radio Magazine, the front page of which is reproduced (right), dated 1st January, 1931, quoted Press reports on the set and the "Talking Helmet" which was meant to go with it, but gives no definite facts about its use by the police. The picture here was captioned "Mr. H.W. Adey trying out a receiving and transmitting set he has designed".

# ADEY RADIO MAGAZINE.

LONDON. 1st January, 1931



THE LIVES OF THE POLICE AND PUBLIC  
ARE NOW HAPPY ONES. WHY?  
READ WHAT THE NATIONAL PRESS SAYS ABOUT  
THE ADEY RADIO.

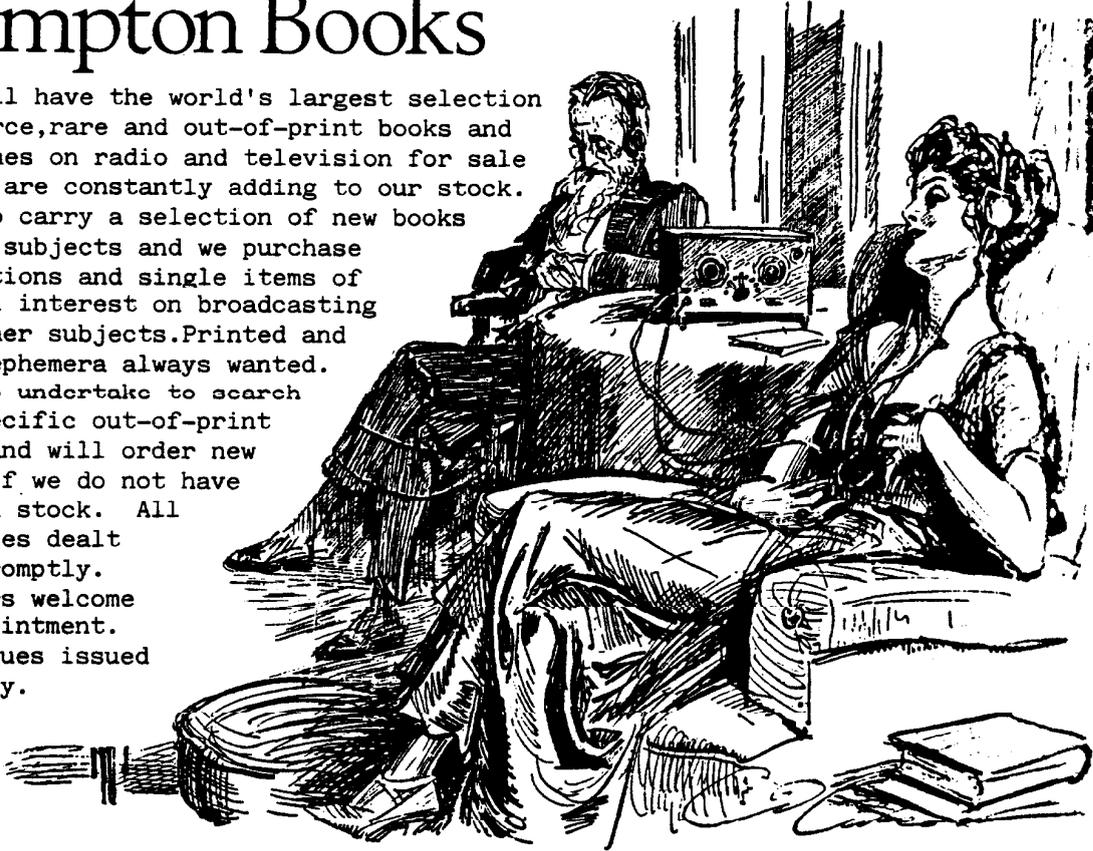
The 3-valve headphone suitcase of 1932 had two self-couplers, a 2-way "Key" and two wavebands. The case was blue and since it was only made for a few months, it is now very rare. In 1931 a new model 4-valve portable appeared, which introduced the self-coupling valves, C210 (3) and output valve AP220. A version without self-couplers was also still available. The cabinet of the new set was 1" narrower than the original and the chassis was moulded bakelite. The wavechange switch was moved to top left, and the tuning knob was now top right. In 1932 changes to the 4-valver included: reduction of cabinet width to 8½"; valves (3 couplers) mounted on bakelite chassis, horizontally instead of vertically; two-position "Key" (for wavechange too); tuning knob, top front, right. This set continued until 1935 and at that time an all-wave portable, similar, but with an extra self-coupler mounted behind the speaker, appeared.

Cabinets for the Adey sets could be supplied in walnut, mahogany, oak and lacquer. Finish up to 1932 was French polish and thereafter cellulose. Cabinets were made by Smith and Powell, London, EC1. and finished in the factory except for the lacquer one which was painted by a lady living in Essex. Valve bases were made by London Moulders Ltd. of Wembley, and pins by Clix. The wire used for winding the chokes on the bases was 43g silk/enamel. Keyjacks were by Igranic, engraved by Fentons of Soho; speaker cloth came from France and after 1932 cones were by R.O. Bridger of London, N16. The suitcases for the one and three valvers were by Thomas William Bailey of London, EC1; handles by Barrow, Hepburn Gale of London, SE1. The aerial wire was 26g DCC (MW) and 30 (LW), battery 45v for all models and 1.5v GB. After 1932 the intervalve TX was RI skeleton type D420 5/1, otherwise RI case type DY20.

In 1930 the Adey factory was in Union Mews, W1. and employed six. Showrooms were at 99, Mortimer Street, W1. In 1932 the factory moved to Marylebone Road where 12 people were employed.

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# *Down in Devon*



A growing collection which will form the nucleus of a future new museum in the West Country is that of Robert and Pauline Brain and their son Richard, who live in a charming and artistically converted farmhouse in Bideford, Devon. Robert and Pauline have a background in arts and crafts and have much experience in the faithful preservation and conservation of old buildings and all kinds of artifacts. Young Richard is at present studying for a BSc in electronics in London, so the family have all the talents required to set up a museum. They have been collecting all kinds of things for twenty-five years and once had their collection housed in a real ancient castle which they bought and restored and finally sold to move to their present farmhouse home which they took over as another "ruin" for revival.

They began collecting wireless equipment only six years ago but have made good progress. Originally they looked for visually attractive objects to add to their large collection of perambulators, old bicycles, music-machines and other objects, but lately they have been trying to build up a comprehensive collection that will reflect the history of wireless. So far, they have about 150 valve sets, 20 crystal sets and 20 television receivers. They are also interested in ephemera and signs and placards.

Many of the earlier sets in the collection are home-made ones, reflecting the fact that the farming community were unable to afford commercially-made receivers. Pride of place goes to the sloping-front four-valver pictured above with Robert and Pauline. It is particularly interesting in that it appears to have been made by the local plumber of a small mid-Devon village. Dating from possibly 1923, the set has a large brass plate on the panel proclaiming that it was constructed by "Paddon and Son, Plumbers and Electricians". It is not known whether the set was made for

the maker's personal use or as an exercise in blossoming back-shed wireless-industry enterprise.

Devon was rather remote from the mainstream of early broadcasting, so the Brains found difficulty in turning-up crystal sets. They were lucky to secure a couple of frame aeriels together with a BTH C2 horn speaker complete with a bird's nest in the funnel- both came from a hayloft. Other speakers in the collection include one with a papier-mache horn and a number of later cabinet ones with attractive frets including various forms of "Sunrays" and a stork design.

Among the many thirties sets is a Philips 634a "Ovaltine" set, an American Majestic, a Sobell "Toaster", a Ferranti "Arcadia", some round Ekco sets and a number of Marconis ranging from a V3, models 47 of 1928 and model 256 seven-valve portable. One of the most impressive of the big sets is an Ekco "Radio Brain" model RG516 which sold in 1939 for 25 guineas. An eight-stage, all-wave motor-drive superhet with press-button tuning.

Television sets in the collection include a 1929 disc type televisor, a 1937 Baird with 19 valves, several "mirror" sets, the Bush TV22, console versions and a gigantic RGD incorporating gramophone and radio as well as television. Television "add-ons" include a large magnifier which was used to increase the apparent size of nine-inch screens and a tinted celluloid sheet intended to give a black-and-white screen an impression of being coloured.

Most of the collection is now in store in various barns on the farm, and is not readily available for inspection, but Robert and Pauline would be pleased to hear from any members who may be interested in a chat. They hope soon to be able to open a museum in a "stately home" in Devon.

RH

"SOME EFFECTS OF the 1922 REACTION REGULATIONS - correction.

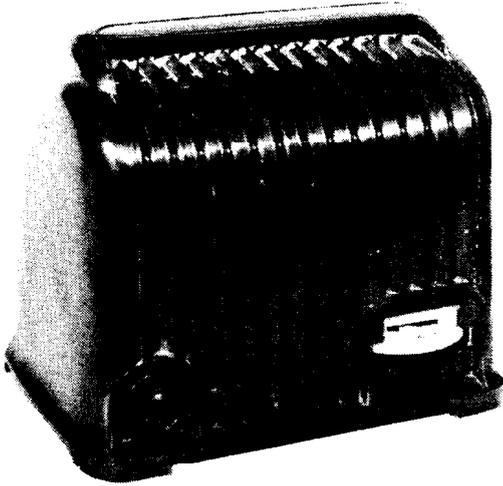
We apologise for the omission of a paragraph from Ian Higginbottom's article on pages 44-46 of Bulletin Vol.8, no.3. The omitted paragraph which should have followed after the penultimate paragraph on page 45 which ends "regulations" should have read as follows: "Towards the end of 1923 the ban on aerial-circuit reaction was lifted. The earliest mention of its removal which I have found so far occurs in Wireless Weekly for 7 November 1923, but there must be a strong presumption that this happened on, or very soon after, the introduction of the Constructor's Licence on October 5th. (See BVWS Bulletin Sept. 1979). Realising that it was powerless to control the home constructor's choice of circuit, the Post Office must have seen the absurdity of continuing to place the same constraint on the commercial manufacturer, putting him into an even worse competitive position than before. There seems to have been some prevarication by the Post Office in admitting to the end of restriction, and possibly no official announcement was ever made. Much uncertainty resulted. For example, although from early November 1923 the Radio Press journals were publishing details of the circuits which had become permissible, Popular Wireless was still reporting on 22nd December that the Post Office denied any change in the regulations. "

MANCHESTER 2ZY STATION

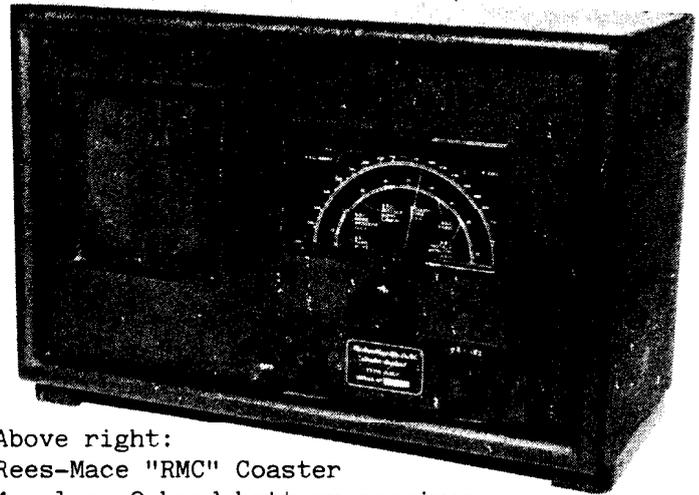
I am researching the history of broadcasting in Manchester and if any member has recollections or literature on 2ZY I would be grateful to hear from them- IAN HARTLEY, 252, Brooklands Road, Wythenshawe, Manchester. M23 9HD.

CONTRIBUTIONS TO THE "BULLETIN" AND THE "NEWSLETTER" ARE ALWAYS WELCOME

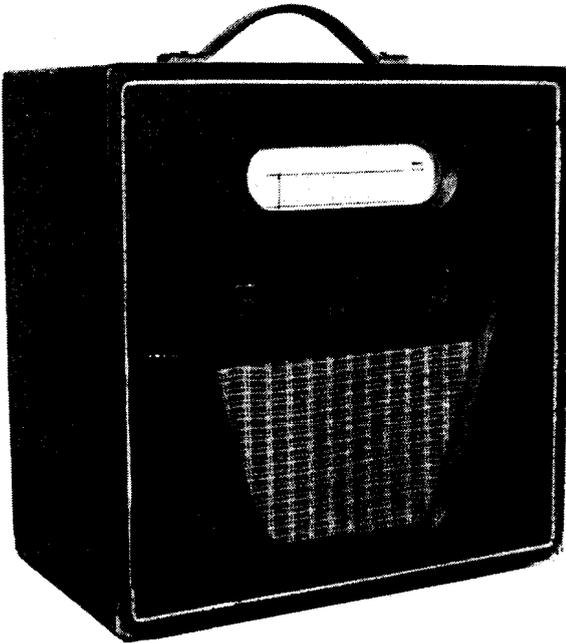
## A FEW OF THE SETS IN ROBERT BRAIN'S COLLECTION



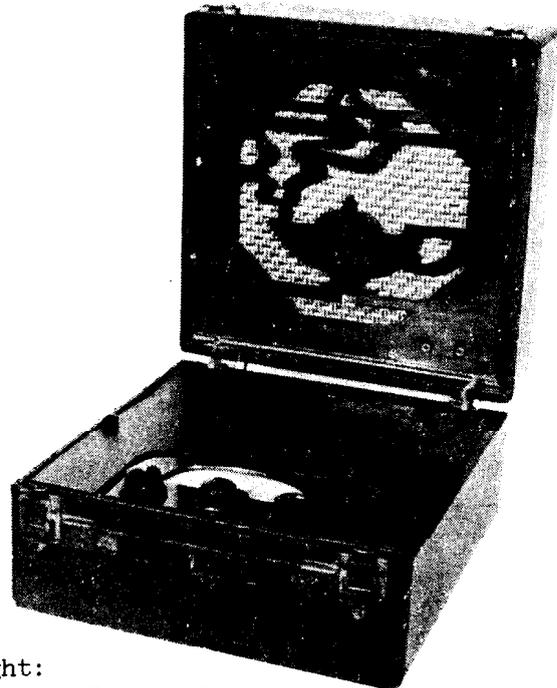
Above left: Sobell 4-valve,  
two-band. AC-DC. Brown bakelite.



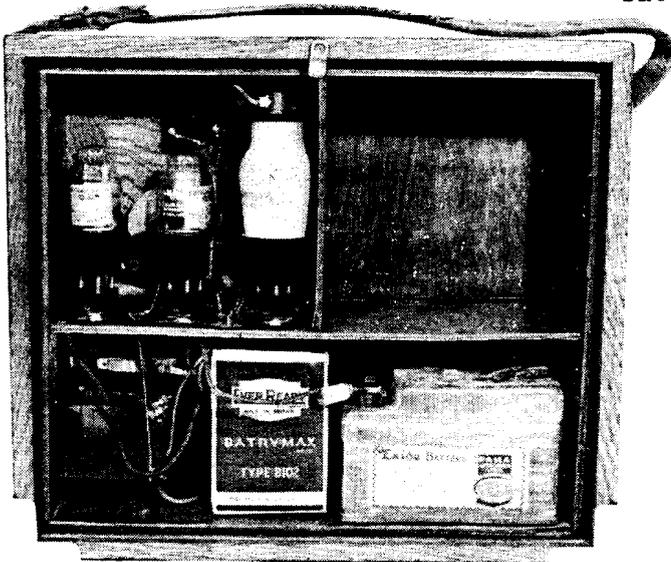
Above right:  
Rees-Mace "RMC" Coaster  
4-valve, 2 band battery receiver.



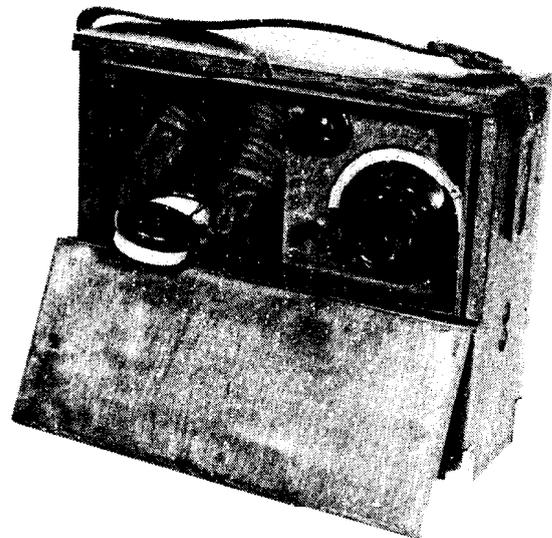
Above: Murphy B93 battery portable  
superhet. Short and medium wave.



Right:  
Roberts MB4 4-valve  
battery suitcase portable.



Above and right: "Three-in-one" 3-valve battery receiver, home-constructed  
from Wireless World design of 1935.



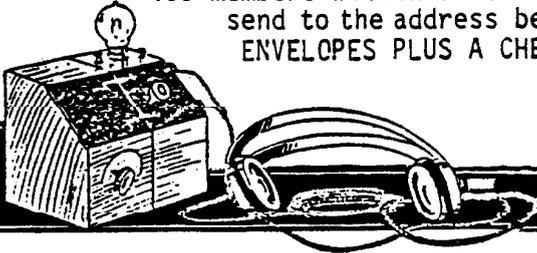
Photographs: Jonathan Hill

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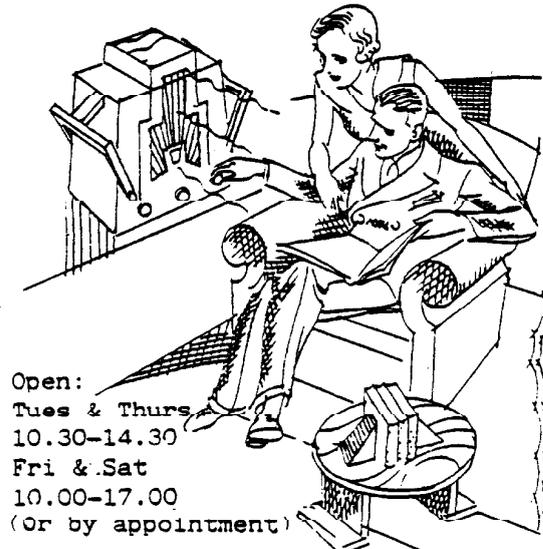
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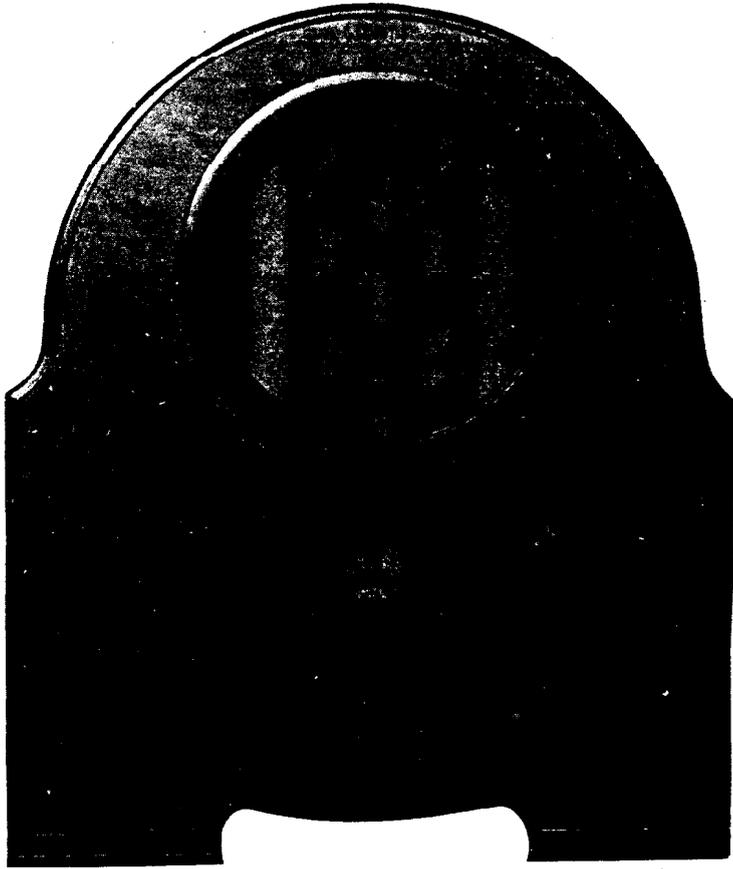
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# The 634A

The Philips 634A Receiver illustrated here is a much desired collector's piece for many reasons. It has a very impressive look about it, and was popularised by its appearance in an advertisement for a bedtime drink, after which it got the name of the 'Ovaltiney Set'. But for the technically minded, it has very special interest because of its circuitry and its complicated mechanics.

Here, G.V. Dixon-Nuttall tells the story of the 634A and the other sets in the "Superinductance" range.

The term "Superinductance" was first applied to the model 730A in 1930. The word itself is meaningless and was invented by Philip's PR department to sound impressive. It evidently worked. I have memories of asking an expert what it meant. He said "Well, it's a cross between a TRF and a Superhet !"

The only original feature of these receivers was the high quality of the tuning coils which made reaction unnecessary and ensured constant performance and easy operation. All receivers had two RF stages. The better ones had four tuned circuits, the cheap models two. The coils were apparently matched in sets and a calibration chart was supplied for each set. The cheap sets with only two coils managed to fit the calibration of the dial very closely: how they managed this is something of a mystery. The famous coils were wound with Litz wire on glass formers and enclosed in large copper cans, which added to the impressive appearance. The use of glass tube had an advantage in that Philips were primarily lamp manufacturers and had a lot of it lying about. The earliest Philips sets had resistors wound on glass too. A lot of money was spent on elaborate test gear for checking the alignment and performance of the sets. According to the literature put out by the firm in large quantities, they intended to go on making TRF Sets until something better turned up; at a meeting of their designers in 1930 they came to the conclusion that the Superhet was not suitable for European conditions, despite its popularity in the USA. In concentrating on the elaborate TRF receivers Philips were well aware of the snags. Among these were: (1) the set is operating on a knife edge between poor performance and instability. The position of every wire is critical. (2) the matching of the tuned circuits is all-important. Before the days of Ferrite-cored coils this presented quite a problem: fitting the can changed the inductance drastically and unpredictably. (3) the gain varies over the band as the L/C ratio alters. (4) the waveband switching is very complicated and short wave operation is ruled out. (5) the cost of all the coils and the high-quality four-gang capacitor is unavoidably high. The last point proved to be their undoing. The time came when the Superhet became better and cheaper than the best TRF receiver. Philips were still proclaiming their faith in the Superinductors in 1933, although they were at the time designing a Superhet of their own in time for the 1934 season. One this appeared, the public decided the future, the Superinductors lingered on but by 1936 it was all over.

continued on next page

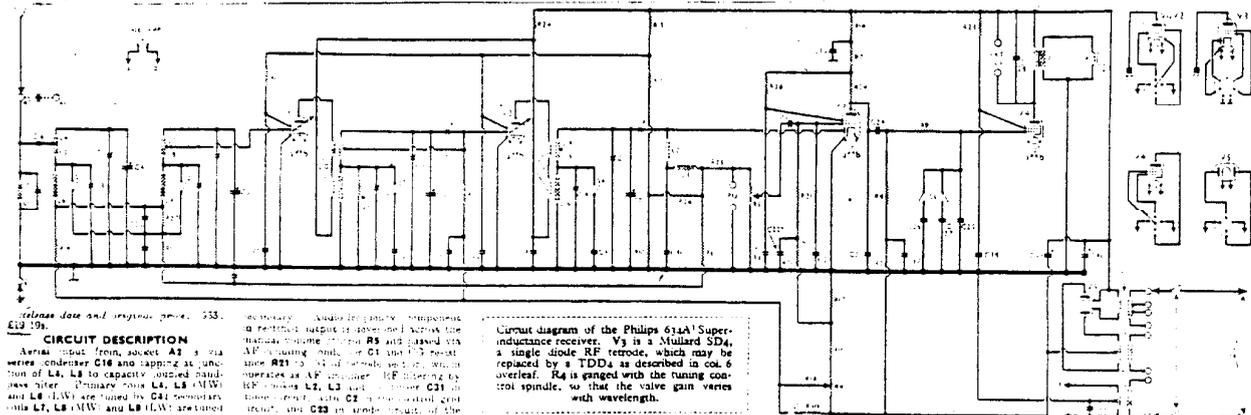
A large number of these sets were made, and very well made too. Today, the performance is most impressive, and of course, there are no images, harmonics, or whistles. No wonder they are regarded as very collectible.

The first to appear was the 730A in 1931-2. Without the speaker it was known as the '720A' and the prices were £23 2s and 17 guineas respectively. The circuit has no special features but is the first appearance of the band-pass input circuit that Philips used until about 1939. In 1932-3 they added another circuit and produced the 630A for £24 3s. and also the first of the cheap sets, the 830A which managed to get down to 16 guineas. This had only two tuned circuits, the anode load of the second stage being a coil tuned outside the LF end of the band, so raising the gain at that end. The cabinet was one of those odd affairs of mottled Paxolin so favoured by Philips at the time. It looked very cheap but was actually very complicated in construction. They also made the 830B which was a battery version. One of its valves was used to control the output valve bias so that it used less current during quiet passages, which was very clever- but was it really worth it? The 1933-4 year was a good one. They produced the famous 634A (this was dealt with fully in Bulletin Vol.1. no.2) It was the first of the sets to have AVC and also the cunning arrangement which varies the gain over the band by ganging a potentiometer with the tuning. It sold for 16 guineas. Not so widely known is the 636A This is the 634 with knobs on! To the features of the 634 it add amplified AVC and interstation noise suppression. All of this was very impressive but its size, ugliness and price (£24 3s.) probably limited its sales. The set is very rare and the only one I have heard of belongs to Gerald Wells of the Vintage Wireless Museum, Dulwich. He reconstructed it from bits- like a dinosaur! Both these sets contained the SD4 valve, which thereafter sank without trace and is now almost unobtainable. Also in 1933-4, the 830A was redesigned as the 834A, the alterations consisting of leaving bits out and putting the chassis in a simpler, and I think uglier, cabinet. Note that in this set the volume control is also the smoothing resistor! Still, a good set for 11 guineas. The 830B similarly became the 834B. In 1934-5 they produced their superhet, the 588A at 12 guineas. The new model of the year was the 472A, which was a very good set, but at 15 guineas there can't have been much profit in it. The set had a very clever dial drive through adjustable links which enabled them to correct the errors in tracking, up to a point, so that the calibration chart could be done away with. To celebrate this set was issued with two scales, one marked with BBC stations only and the other with absolutely everything on it. You could change them over as you liked. The 834 chassis must still have been around; this year they gave it a better cabinet and called it the 274A and it got down to 9 guineas. By 1935-6, the TRF had "had it". The 472A re-appeared as the 577A, with a more complicated cabinet but down to 13 guineas. The honour of being the last of the Superinductors goes to the 372B, which was a new design with class B output and three tuned circuits, all for 11 guineas. So that was all! I have simplified the range by ignoring the versions made for DC mains and the radiograms. There were not many of them, and they were made for a short time; the same can be said of the vintage Bentley. They don't make them like that any more, and they never will again.

Full size copies of this Trader Sheet are available at 50p each including post (UK)

FRONT COVER PICTURE:  
Normal Jackson's drawing shows the remarkably complicated gear, belt and pulley dial-drive system which lurks behind the tiny tuning dial escutcheon.

"TRADER" SERVICE SHEET **PHILIPS 634A**  
**613** SUPERINDUCTANCE RECEIVER

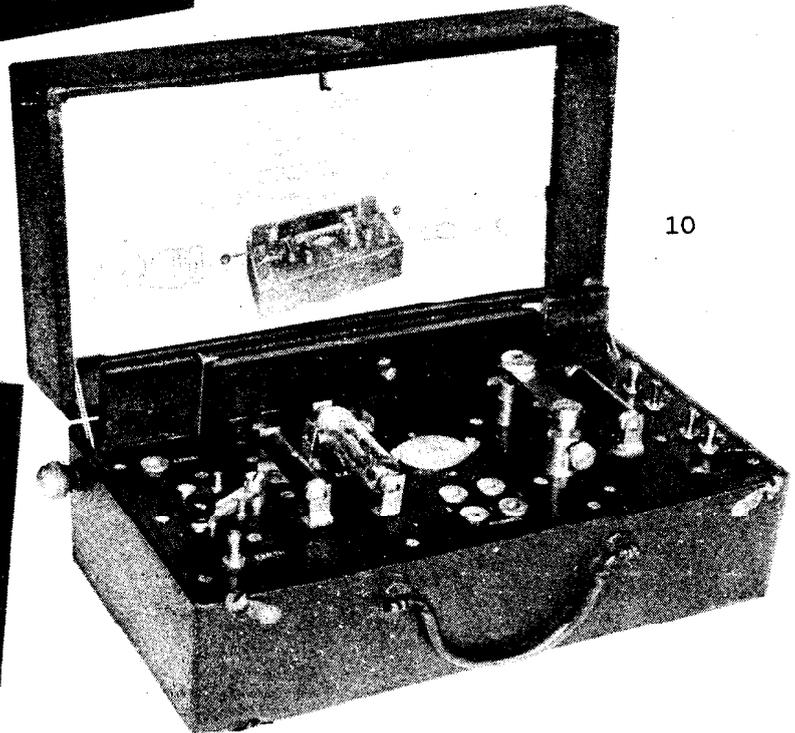
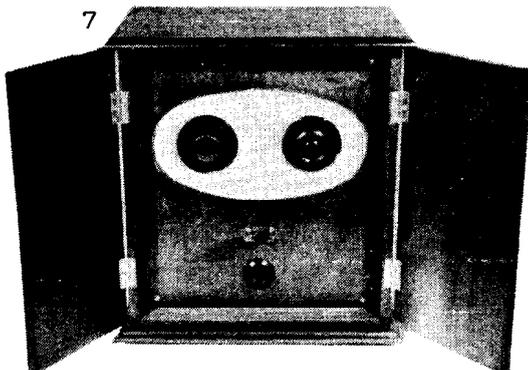
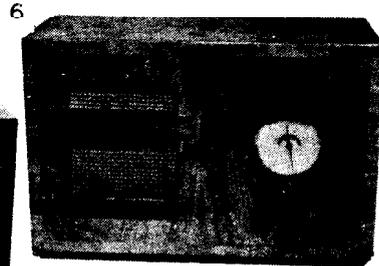
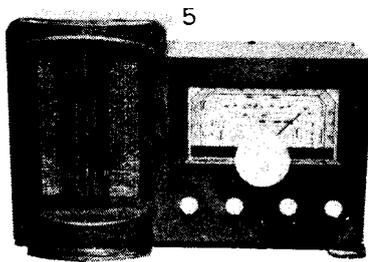
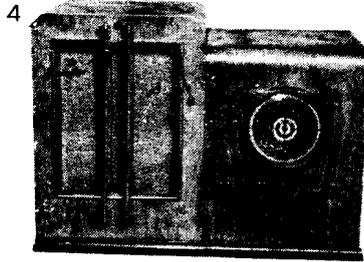
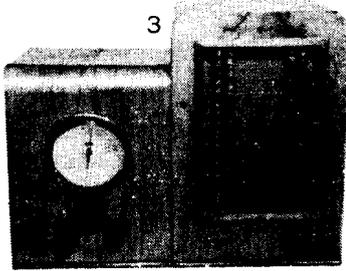
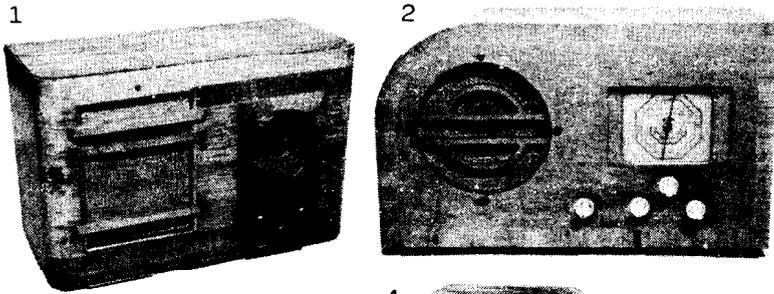


**CIRCUIT DESCRIPTION**  
Aerial input from socket A1 is via series condenser C18 and coupling to junction of L4, L5 to capacity coupled band-pass filter. Primary coils L4, L5 (MW) and L6 (LW) are tuned to Q41 secondary coils L7, L8 (MW) and L9 (LW) are tuned

to secondary. Audio frequency transformer in feedback circuit is across the primary winding of L9 and biased via AF tuning coil C1 and C2 feedback coil R11. AF network section which operates as AF amplifier. RF filtering by HF coils L2, L3 and capacitor C3 in feedback circuit. C2 is a variable gain circuit, and C23 is a variable gain circuit.

**Circuit diagram of the Philips 634A Superinductance receiver.** V3 is a Mullard SD4, a single diode RF triode, which may be replaced by a 7DD4 as described in col. 6 overleaf. R4 is ganged with the tuning coil spindle, so that the valve gain varies with wavelength.

# Puzzle corner



Can anyone identify the six radios pictured left (1-6)? They are all believed to be 1930's models and only two of them can be identified - "The International" and the "Transatlantic". When were these radios manufactured and what are the other four models? They were made by Radio Acoustic Productions, "RAP Ltd", Ferry Works, Thames Ditton, Surrey. We have also heard that "RAP" stood for "Rent and Purchase" indicating that they were produced for some sort of rental scheme similar to that of Radio Rentals Ltd. Can anyone throw any light on this?

- (1) 4-valve + rect. 3-band. Walnut cabinet, 12½x19x9. A.C.  
 (2) 3-valve ditto 12½x20½x9 A.C.  
 (3) "International" 4-valve+rect. Walnut. 13½x17½x8½. 3-band.  
 (4) 3 valve + rect. 3-band. Walnut. 13½x17½x9½. A.C.  
 (5) 4-valve + rect. 5-band (inc. 3sw.) Walnut. Glass back.  
 (6) 4-valve + rect. 3-band. Walnut. 13½x19½x9. A.C.

Picture (7) is the Smiths III, model 2093 (?), 3-valve, two waveband. Battery. Rosewood cabinet 15½ high. This set was photographed at Harpenden in November and the name has been mislaid. If it was you, can you please say who made the set, and when? Was it Arthur Smith? What was the maker's address?

Picture (8) is a kit set, we think. 3-valve, 2-band, battery. In oak cabinet 10x12x10.

Picture (9) is the Grid Leak "Pocketphone", published in the last issue and now identified by Gordon Bussey as made in 1937 in London, and brought out in time to be used by the spectators at the Coronation. Fuller details will appear in the next Bulletin. If any member can write details of its performance the Editor would like to include them. If you have a spare knob to fit the set, it would be appreciated.

Picture (10) is the Marconi Valve-Crystal receiver which is a bit of a mystery. When exactly was it made and how long was it offered for sale? Why are the Marconi markings and the BBC number always missing from examples of it? Was the set sold off to a firm like Millelts in bulk, as with the Crystal A? If you can give any details the Editor would welcome a letter, to help produce a feature in the "Classics" series in the next Bulletin. A clear photograph of the inside would be appreciated - any spares of any of the components under the panel are welcomed by the Editor (for cash or swaps) as part of the research for the article. If any member who has an RB10 would bring it to Harpenden in June for photographing, it would be very helpful.

**Problem:** In 1930, the first bandpass Mains Superhetrodyne was introduced, marking the historic beginning of the superhet revival. Does any member know which model this was? Was it Burne-Jones' "Magnum Bandpass Four, AC"?

DO YOU HAVE AN UNUSUAL ITEM FOR "PUZZLE CORNER"? IF SO, PLEASE SEND A GOOD CLEAR PHOTOGRAPH.

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# Vintage vision

Report from John Gillies, who is chairman of the recently formed VTV section of the Society.

Following the report by Roy Sonnex in the last issue, there seems to be a great deal of interest in Vintage Television and I feel I must define what appear to be the main interests of members. A few are specifically interested in "Mechanical" television, started by the BBC as far back as 1929, using the Baird 30-line system on an experimental basis. Various kits were produced by Baird and other manufacturers to receive these transmissions on the medium wave band and such receivers are much sought after. But the majority of members seems more interested in acquiring the first fully-electronic receivers, first produced in 1936. These sets, in the main, remained in full production until 1939, some new models being introduced each year. The "Golden Age" of television is therefore during these three years from 1936-1939. There is no doubt that collectors of these early sets look upon them with the same enthusiasm as collector's of early wireless sets. Regular transmissions on the "405 line system" started from the Alexandra Palace on November 2nd. 1936, making England the first country to introduce a regular television service.

The first public demonstration of the 405-line system was at Radio Olympia on August 26, 1936 where no less than nine manufacturers had receivers on show. The system was developed by Marconi-EMI and I do not think it is any coincidence that the majority of pre-war sets found today are from that stable. The Postmaster General had decided at the opening of the service that the 405 system should alternate with the Baird 240-line system for the trial period. (The 240-line transmissions, although produced by mechanical means, were designed to be viewed by an electronic receiver employing a cathode-ray tube.) The two systems alternated weekly for a period of three months. This meant that the first receivers produced had to have a switchable line standard between 405 and 240 lines and a field standard of 25 per second and 50 interlaced frames per second. I have not seen one of these early "dual standard" sets. The examples in my collection have a blanking plate over the position of the changeover switch and the extra valve required. If anyone has an example of one I should be very interested to hear from them. It is interesting that the review of the HMV 901, in the January 29th, 1937 Wireless World, shows the extra valve. There were not very many sets produced before the war. After the service had been running for a year only 2,000 receivers had been sold and at the outbreak of the war in 1939 it was estimated that only 20,000 sets were in operation. This was mainly due to the high cost of receivers and the small number of programmes being transmitted. The service was only intended to be received in the London area but reports came in of reasonable pictures as far away as Brighton and even the Isle of Wight. It is interesting that although the majority of sets which come to light are found in the London area, I know of several discovered in all corners of the country. It is worth mentioning that although it is the pre-war 405-line sets which are most sought after



Trick photograph by Jonathan Hill:  
John Gillies on the screen of one of his sets.

some of the models produced immediately after the war when service re-opened in 1947 are also collectable. The design of many of these differed very little from the pre-war models and retained the mains-derived EHT systems and large octal and British 7-pin valves in the timebases. The most noticeable difference was that by then, new types of valves had been developed for use in VHF Radar equipment during the war. The valves, such as the famous Red EF50 started to appear in television receivers, followed by the EF91 miniature 7-pin valves. The RF stages of pre-war sets, had to make do, in the main, with valves originally designed for MW broadcasting receivers. The EMI sets, for instance, used no less than six MSP4 valves in the TRF vision strip of their first models. Due to the rarity of pre-war receivers it has been suggested that were as a Society start a register of sets in individual collections. I have received list from one or two members and would be glad to hear from others about their sets and their experiences in finding them and restoring them: in fact anything to do with pre-war television. We would welcome articles on specific sets and on any aspects of early television. I know the Editor would like to hear from anyone who would like to contribute.

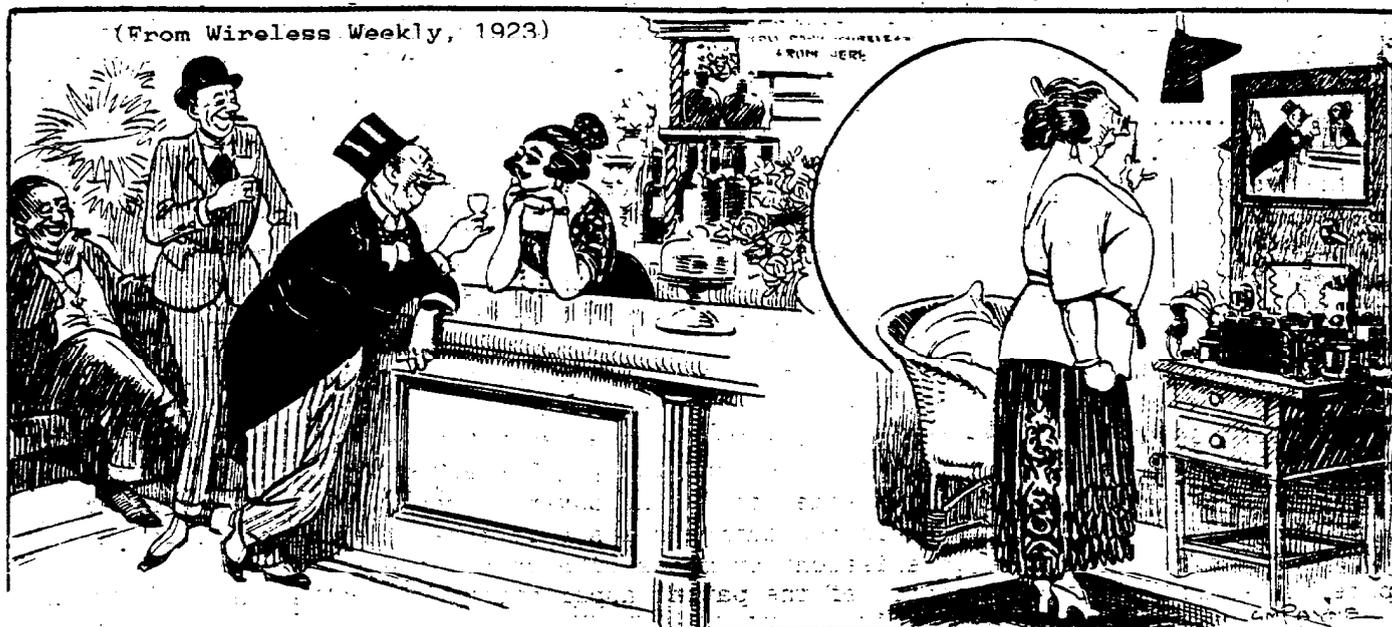
# The missing numbers



Here are some more numbers to add to the list previously published. If you have not yet sent in your numbers or require a copy of the List please contact the Editor. The following details have been sent by Pat Leggatt.

2002 Wemco 1 valve amp. 0281 Wemco Combined crystal set (124) and amp (2002). The foregoing numbers were, wrongly, reversed in the " addendum to the original list. 0136 Fellows 2 valve broadcasting cabinet ( mistakenly shown as "136" in List.) 1008 Simplex , HPR Wireless Ltd. The question mark in the list can now be omitted. 118, this number applies to the W.W. Ltd. Crystal set which is identical to the H.D. Butler set. Additions to list: 2176 Bligh Radio/2 Mk V. 4410 Bligh Audio/2 Mk VII. 3026 Fellowphone amp type 1488 LF. Question: 114 is listed as Burndept Ethophone 1 crystal set and 130 the Sterling no.1 crystal set. My Sterling No.1 is identical in construction and lid instruction sheet to the Ethophone illustrated on p.82 of Gordon Bussey's book , but neither my set nor Gordon's illustration have numbers.

## HORRORS OF THE FUTURE: THE "RADIO EYE."

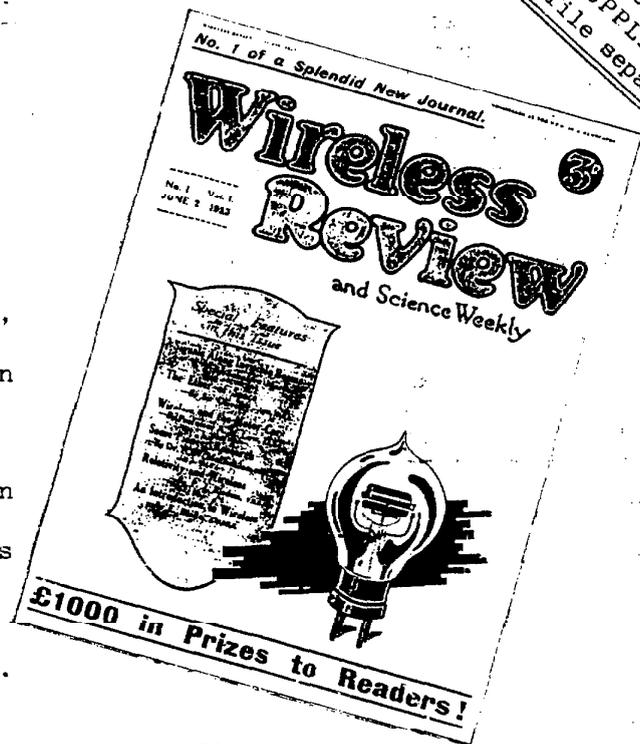


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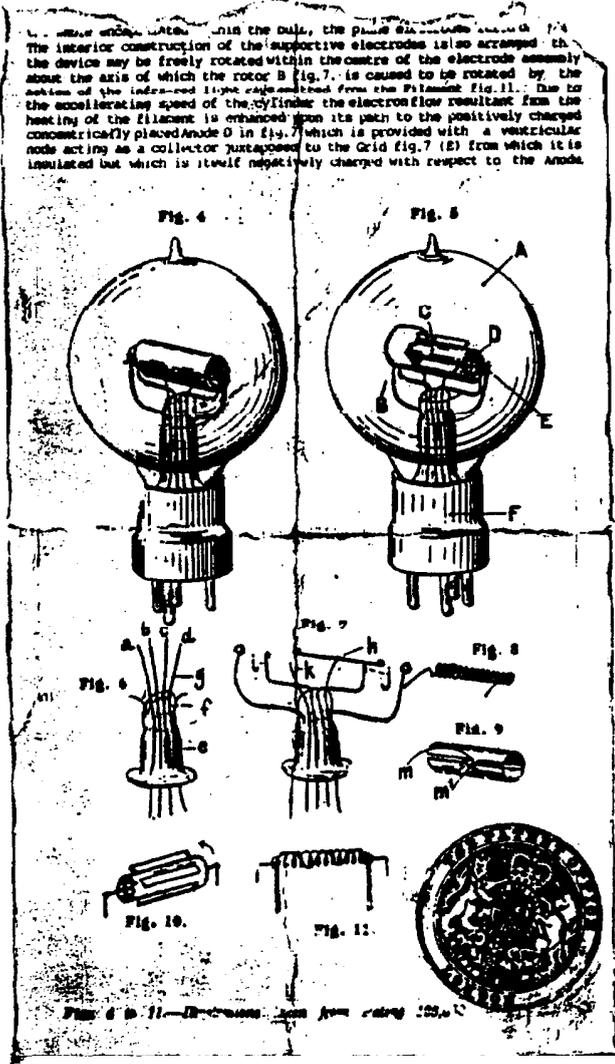
The mystery of the

# "AnoDyne"

In "Wireless Review" of June 2nd, 1923, the front page of which is reproduced here, there appeared first news of a remarkable new thermionic valve which was described in the Editorial article as "a unique and quite revolutionary development in high-power amplifiers". Unique it certainly was, for nothing like it had ever been seen before nor has been since. Revolutionary it was too, in more ways than one. But what is also remarkable is that it seems to have disappeared as suddenly as it appeared. The valve was called the "AnoDyne" and few collectors appear to have even heard of it.



They were fond of fancy names in the 'twenties, especially ones which seemed to have a scientific or academic ring about them. The name "AnoDyne" is a good example. Based on the Greek "Anode" and "Dyne", the term was probably intended to conjure up the idea of a valve with a little dynamo inside. But what exactly was the AnoDyne valve? To answer that question is impossible, for no proper description of the device ever seems to have been given. The "Wireless Review" article is simply a eulogy and gives only a vague idea of what the valve was supposed to do. And the advertisement for it in the same issue, placed by a small firm which was better known for its valve-repair service than for the design of valves, makes modest and fairly ordinary claims for the product. Even the outline specification for the patent application obscures more than it reveals, for it is largely incomprehensible. The valve does not seem to have been mentioned in any of the authoritative sources of its day, nor even another popular wireless journal save the short-lived "Wireless Review". But let us begin with the report in that particular journal - a few short paragraphs in their "Science Jottings" feature, a rag-bag of news items, written in a chatty, journalistic style: the kind of "appetizer" one might expect to see in a new paper aimed at a mass-market of not particularly knowledgeable readers. The item gives no real information but makes suggestions which must surely have given rise to surprise if not scepticism among the more knowledgeable readers. The article begins with the simple explanation: "In the normal valve, the electrons thrown off by the heated filament pass through the grid and are attracted to the anode..." and continues "but in the AnoDyne valve, there is a second anode, placed concentrically with the first. This second anode is caused to rotate by the action of the infra-red light from the filament upon its alternately-placed black and white vanes, and has the function of receiving impact or secondary electrons, thus greatly increasing the amplifying power of the valve". No supporting information is given to substantiate this somewhat incredible statement, and the author, perhaps to justify his position, concludes: "Naturally, the exact details of this remarkable new device are at present a closely guarded trade secret, but further news of the development will be given, together with the report of a test in our own laboratory, in due course." In fact, the journal does not seem ever to have referred to the "Anodyne" again, and no other publication of that time seems to have mentioned it at all. (Incidentally, there is also a little mystery about that particular issue of the "Wireless Review" in that in some copies of the same issue, the item on the valve was omitted and replaced by a photograph with the caption "The world's largest Incandescent Lamp". The author would like to hear of any other variations. In the same issue, the advertisement for the valve seems also to have undergone changes. In the author's issue it makes the modest claim of "40 to 60 percent increase in emission" by means of "a unique theory-protected by patents pending".) A search of the patent applications at around the relevant



Left: part of an "abstract for a patent application.  
Below: A contemporary advertisement.

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**ANODYNE**  
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date reveals no mention of the Anodyne, but an "abstract" which appeared in the Zeitschrift Rundfunk Geschwafel, published in Hamburg in April of the same year includes a drawing and part of the original description, crediting a man called Kurz Schluss with the invention. The only credential given to him is a statement that he was "connected with the Electrical Institute of London", but this must have been an error, for no organisation of that name existed in London at that time. The drawings show something that looks remarkably like an "R" valve. having the familiar horizontal electrode assembly. But in what looks like a "cut-away" view of the Anode. there appears to be a kind of finned cylinder inside the conventional Anode. The text of the reproduced document is barely readable, and is in any case rather incomprehensible, but it seems to suggest that this was intended to rotate within the device!

Now, the notion that a rotor can be activated by light-waves within a vacuum has been known to every schoolboy since Crookes demonstrated his "Solar Engine" or more properly "Radiometer". The reason why the Anodyne never got a patent may have a lot to do with its obvious similarity to the Radiometer. But even if the rotor anode did revolve in the Dynode, how did it double the emission of the valve? Had this elegantly simple device somehow anticipated the sophisticated electron multiplier? And just as puzzling: how did 1920's technology manage an efficient yet virtually friction-less commutator to collect the charge from the rotor?

The mystery of the revolutionary Anodyne valve will not be solved until an actual example of the valve turns up somewhere: and one with an intact filament!



## Arturo's odd idea



Left: The inventor, pictured at round about the time when he sold the small car business he had established in North London, before returning to his native Italy.

Truth, it is said, is stranger than fiction. Well, listen to this ! The first "Spaghetti " resistance was actually made from pasta !

Believe it or not, an emigré Italian motor and electrical engineer settled in London, invented it in 1923 . He was Arturo Benetti Bolloni, who was born on the outskirts of Naples in 1901 and settled with his parents in Hoxton Street, Bethnal Green just after the first World War. His parents invested their small capital in a working mens' cafe a few doors from the old Hoxton Music Hall. It was the front room of a house behind which was a small motor-car workshop which fascinated young Arturo, who became apprenticed to the old proprietor. After a couple of years, the old man died and Arturo took over the workshop. As well as general car repairs, Arturo dealt with car electrics and did such things as re-winding magnetos. At nineteen he was beginning to take an interest in the fast accelerating wireless mania but his family was still relatively poor and wireless receiving apparatus was still in the "luxury" class. But the Bolloni family were hard-working, and on Saturday mornings they added to their income from the cafe and Arturo's workshop by taking a tea-wagon to the nearby Dalston street market, which was always crowded. Arturo had constructed the wagon, using an old car chassis, and it was he who pushed it to market each week, to help his mother serve tea and bread rolls to the market traders and their customers . They brewed strong, black tea in a black iron boiler on a coke brazier which rested on a gaily-decorated cart (which can still be seen in the Bethnal Green Museum ). It was on one of these excursions that Arturo bought the parts to make his first one-valver, for among the junk on the market stalls, "surplus" wireless bits and pieces , rejected by the quality-control inspectors in the wireless factories which were mushrooming in East London, appeared at very cheap prices. Arturo recorded in his tattered red cash-book that he purchased an ebonite panel, a tuning condenser, a variable resistance and a hank of coil-wire for a total of ten shillings - equivalent to sixty twopenny cups of his mother's brew. He does not record having bought a valve, but that must have cost him slightly more. Having got his set of parts, Arturo started building his set early next morning, according to the daughter of a former neighbour of the Bolloni family, Mrs. Ethel Kydd, who still lives in Hoxton. She recalls how her

father, Herbert, watched "Artie's" wireless experiments with fascination and how he later built them their first set. But on that Sunday morning when Arturo was about to start work on his own first set, a situation was to present itself which led to an odd invention. And the idea was of that bizarre sort that that comes only from either some sort of lateral thinking or results from a pure accident. There was an element of each, perhaps, in Arturo's invention. Surely no serious-minded researcher in industry would ever have thought of such a thing.

What happened in Arturo's workshop on that Sunday morning in October 1923 was simply this. Arturo discovered that he had all the parts for his wireless set except one - a grid leak. Since it was Sunday, there were no shops open, so he could not go out and buy a resistance. What did he do? Well first, he tried out possible substitutes that were near-at-hand, like bits of old dynamo brushes and broken lead pencils - but none of them was right for the resistance required. In desperation, Arturo began to rummage behind his workbench for inspiration. Now it was on that same workbench that Arturo took his lunch each day and usually it was a dish brought to him from the cafe by his mother. In view of this fact, and the fact that his mother was an Italian cook, it is scarcely surprising to hear that what Arturo found behind the bench was a few lengths of spaghetti. Mrs. Kydd remembers her father recalling the moment of discovery "I could see the funny side of it. I suggested he should wire it up to the aerial terminal and he might get Rome on the earphones! We all laughed but it seemed to get Artie thinking. He started messing about with the dirty old bit of spaghetti. I don't know what he did exactly, and when he told me that evening it had solved his problem I thought he was having us on". It is not recorded whether Arturo used that actual piece of spaghetti in his wireless set - but that pasta which had become coated with carbon dust from broken dynamo-brushes gave him an idea for a new kind of resistance which could be cut to length as required, and could be used as a connecting-wire, requiring no "holder" as did the usual grid leaks. He soon realised that pasta was not a very suitable base material and experimented with several other materials including cycle-valve rubber tube and thick hemp string, coated with everything from rubber-solution to egg-white and rolled in powdered graphite. It took him some time to find the right core material and the right carbon. The final non-edible core, cotton-sleeved variations bore only a visual relation to the original contaminated spaghetti - but the principle was the same! Arturo talked about his idea to fellow enthusiasts at meetings of the Hackney and District Wireless Society which met at the YWCA in Mare Street on alternate Thursday evenings, and the idea got a brief mention in the "Wireless Club Reports" page of Popular Wireless Weekly in January 1924. He had no thought for the commercial possibilities of his invention and perhaps thought it too silly to patent. It was perhaps that brief mention in a wireless magazine which led to the idea being commercially exploited. At any rate, the Burne-Jones company of London SE1 were producing wire-wound Spaghetti resistances in values of from 300 ohms to 15k at from ninepence to half-a-crown each, not long after. Spaghetti resistances became popular on the Continent but oddly enough, in Italy they were simply known as "Flexible Resistances". Poor Arturo was never credited with the invention, which went out of use long before the dawn of our micro-chip age. But next time you're dining out Italian-style and you're unwinding that pasta that seems to be in one continuous length, give a little thought for the man in whom it engendered electronic as well as gastronomic inspiration.

