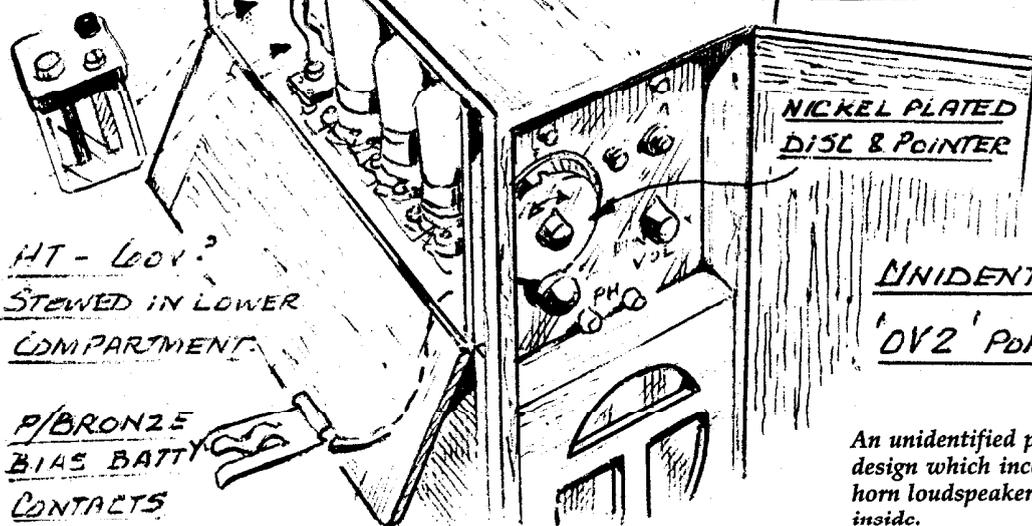
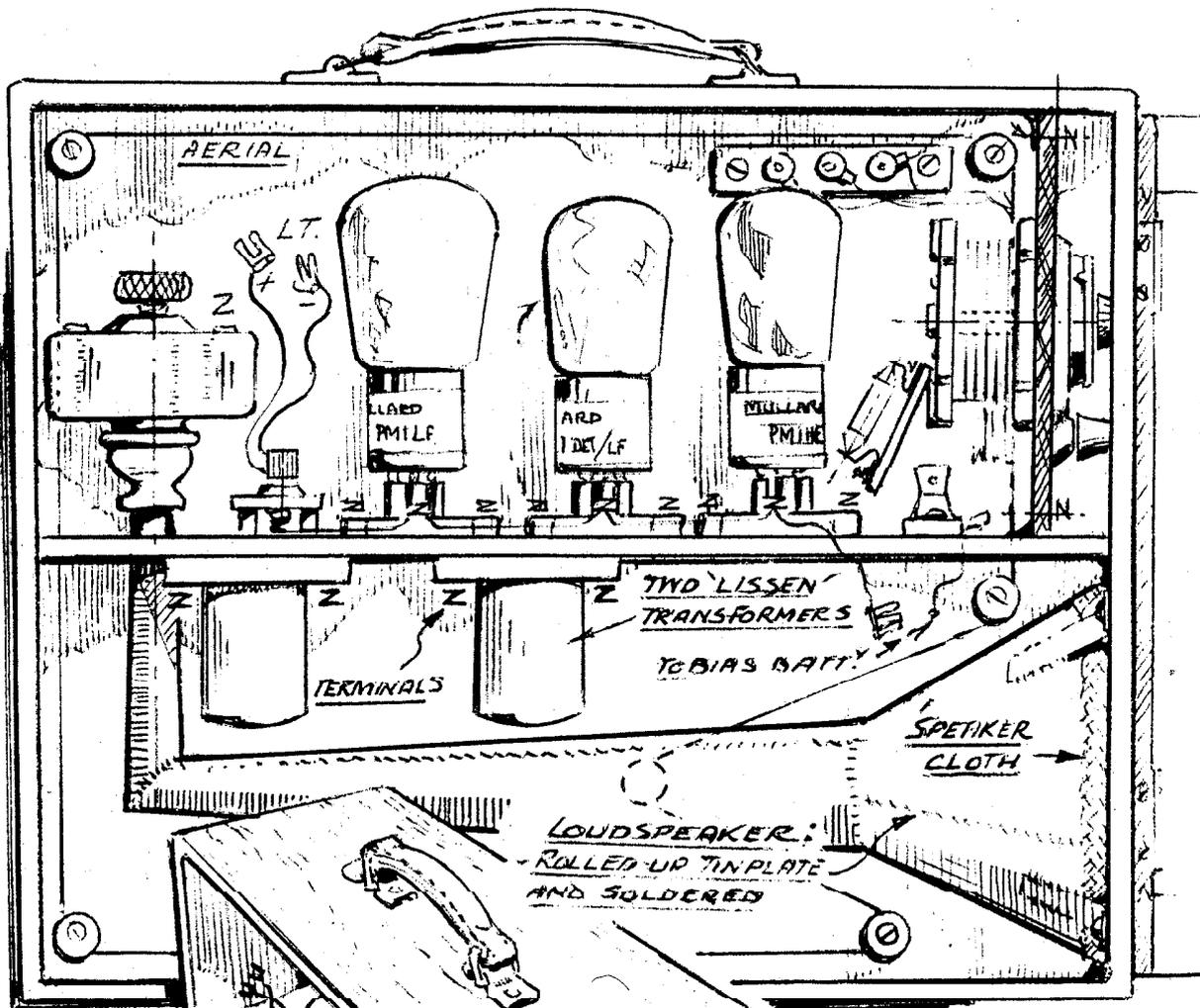


BULLETIN OF THE BRITISH

VINTAGE WIRELESS

SOCIETY

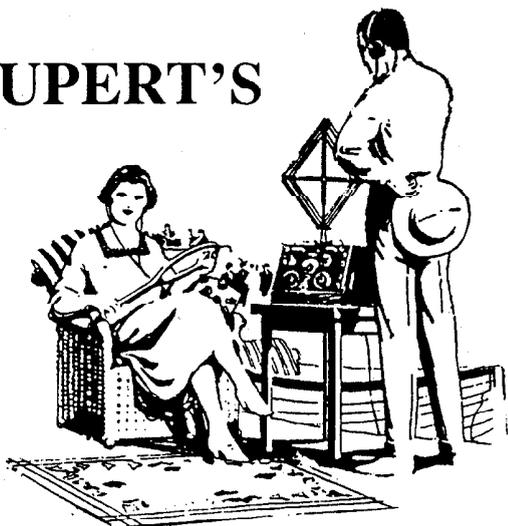


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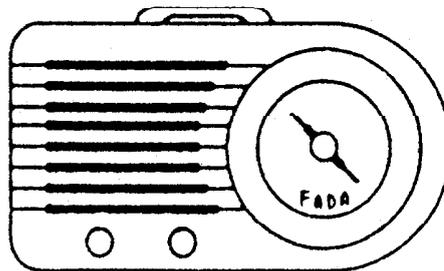
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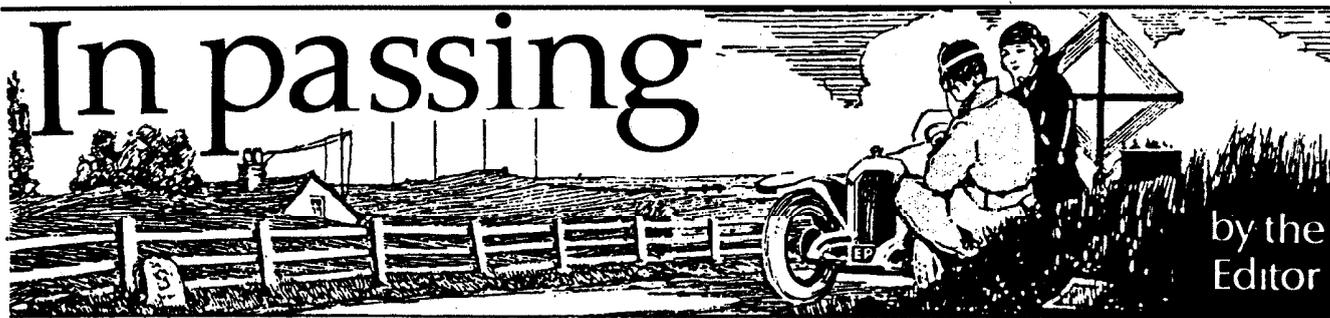
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Correspondence for the Society's Bulletin should be addressed to The Editor, Robert Hawes, 63 Manor Road, Tottenham, London N17 0JH. Telephone: (081) 808 2838.

Important

Members are reminded that annual subscriptions are due for renewal on 1st January for all, irrespective of individual original joining dates. You will need to renew without delay to be eligible to receive further copies of the Bulletin and for attendance at Society meetings. If you do not renew now, this is the last Bulletin you will receive. Subscriptions have been held at the old rate for another year, despite increased costs and a more ambitious series of events for 1992.

Annual Meeting

Members should note that the Annual Meeting of the Society is to be held in conjunction with the Grand Auction at Harpenden on 8th March 1992 and that any nominations for election to the committee must be notified in writing in advance.

Diary Dates:

Members may wish to make a note of the following society events to be organised during 1992: 8th March Grand Auction at Harpenden; 13th June Garden Party at Gerald Welle's Vintage Wireless Museum, London; 14th June Swapmeet/mini-auction at Harpenden; 16th August Grand Auction at Harpenden; 4th October Swapmeet and mini-auction at Harpenden. Apart from these main events, other events such as Seminars will be announced during the year.

Grand Auctions

Our first major auction, held this year at our Harpenden venture, was an enormous success and pleased both buyers and sellers, so in 1992 we are planning two more. A feature of our large and small auctions is that they are now attracting high-class merchandise as well as the usual good supply of cheap and useful items; in fact the sales are beginning to rival those of the important commercial auction houses, attracting items fetching several hundreds of pounds apiece and even some rare and unusual bargains. The auctions serve members by allowing them to sell unwanted goods at good rates and allow fellow members an opportunity to acquire an increasing amount of

apparatus in a situation where supplies are actually drying up. At the same time, a huge amount of restorable equipment as well as general "spares" is also made available to members at fair prices. An advantage is that the commission payable by sellers is a modest ten-percent compared with fifteen percent at the commercial auction houses, and no buyers' premium at all is charged. In addition, the commission is ploughed back into society funds for the benefit of all members.

The buying and selling in vintage wireless equipment on a commercial scale has inevitably meant that prices have rocketed, that equipment is exported out of the reach of British

collectors and that less and less becomes available to them. When the Society began its swapmeets over 15 years ago to enable members to share their finds and help each other with the task of finding spares and exchanging information, there was hardly any commercial interest in the "junk" that so fascinated us. But as with other antique objects, wireless equipment has become of increasing interest to commercial opportunists, leading to the appearance of tempting objects at antique fairs, the setting up of market stalls and shops specialising in it and the final exploitation of the wireless collecting hobby by proliferating private-enterprise vintage wireless and general technology fairs.

All these developments were of course, inevitable, although many of us feel it is regrettable that such commercial activities put many items out of the reach of those of modest means - particularly young people who would like to take up vintage wireless as an interest. In this connection, Society members who find they have items surplus to their collections often make it available to other members at reasonable prices but this goodwill is sometimes abused by the more commercially minded purchasers who immediately resell at a profit, and people naturally find this practice upsetting. Of course, there is a sense in which most collectors become dealers in a small way because of the necessity of disposing of their surplus and of financing their hobby - but this is seen by most members to be reasonable. There is also respect for reputable dealers who can often offer specialist advice and equipment and who need to make a living from their work. Providing everyone behaves honestly and responsibly, there is room for everyone.

In a situation of dwindling supplies and increasing commercialisation, the Society Swapmeets and Auctions provide an oasis of sanity, and since they have no commercial motivation whatever, it is important that we try to keep them going and for members to support them. >

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In passing news and comment, continued

Our meetings are organised on a voluntary basis and all profits to go members and to Society funds.

If you wish to help your fellow members and the Society, you are invited to patronise the Society's auctions and swapmeets instead of the commercial ones: a practice that may serve also to keep Britain's heritage at home!

The Society's next Grand Auction is on 8th March 1992 at our usual Harpenden venue, where it will be accompanied by a small fair restricted to magazines, books, ephemera, valves and small components. Just like the big auction houses, we shall be inviting members to register their goods well in advance and we shall publish a proper catalogue of lots a week before the sale. Admission will be by ticket only, available only to society members and in advance, although to save administration costs and for members' convenience, the small entrance fee will be payable on the day of admission. There will be no admission on the day without ticket, so if you intend to put in items for sale or simply to attend, you must return your completed form and a stamped, addressed envelope to the Organiser as soon as you can.

As usual, refreshments at reasonable prices will be available all day – from early breakfast to late tea.

Amateur radio news

In recent years it has become customary for radio amateurs with common interests to meet "over the air" at pre-arranged times in what are known as "nets". The inaugural BVWS net conducted by Ray Herbert G2KU on December 2nd got away to a good start on 3637 kHz with four members and two non-members participating. They were Fred Ward G2CVV, Douglas Byrne G3KPO, Mike Griffin G3IIN, 'Spenny' Spencer G6NA, and Gerry Brigham G3LEO. The last named is the brother of Rupert of Ealing and he entered into the spirit of the occasion by using vintage RAF equipment from WW2, an 1154 (M) transmitter and 1155 (L) receiver. The next net will be around 3640 kHz on 6th January at 0915.

The historic callsign G2TV, issued to the Baird Company in 1926 for transmitting television signals, was in operation over the weekend of 14-15th

December to commemorate the 50th anniversary of John Logie Baird's successful demonstration of high definition, stereoscopic television pictures in colour on 18th December, 1941.

Exhibition and Seminar

Members had an opportunity to see the unique McVitie Weston and other valve collections – not on public display – at a seminar meeting organised by Keith Thrower of the BVWS at the Science Museum annexe in West Kensington at the beginning of December. It was a most interesting and highly successful event which was over-subscribed, but it is hoped that Keith will be preparing an article about the exhibits and that the contributors to the Seminar will be making available their lectures so that these can be revised in the form of Bulletin articles.

Work is at present in progress at the museum to research and catalogue the McVitie Weston collection of valves and other museum specimens including the RSRE collection of microwave devices such as magnetrons and travelling wave tubes. This is being undertaken by Eryl Davies of the Science Museum with his former museum colleague Geoff Voller and also Keith Thrower, who have found some rare and very special items not before unearthed.

All three made contributions to the Seminar. Others contributing were Desmond Thackeray, Tom Going, John Wilson, Ian Higginbottom, Pat Leggatt and Ivor Abelson.

Overseas Subs

Our Treasurer Alan Carter requests continental and overseas members renewing their memberships by postal or Girobank transfers to please be sure to include on their renewal forms, the date of their payment receipts (or better still, the serial number of their transaction), so that when payment eventually arrives, he can immediately align the payment with the renewal form. This may sound like a blinding glimpse of the obvious, but some forms have been received with neither cheque nor indication of method of payment, says Alan. Such problems are echoed by Harpenden Organiser Robert Hawes, who regularly finds that application forms arrive without cheques or stamped return address envelopes, causing much extra work.

Chairman's Notes

It is now a year since it was suggested that if I didn't become Chairman nobody else would. Faced with this threat I allowed myself to be press-ganged; and having never before been chairman of anything I feel I should thank the Committee for their forbearance.

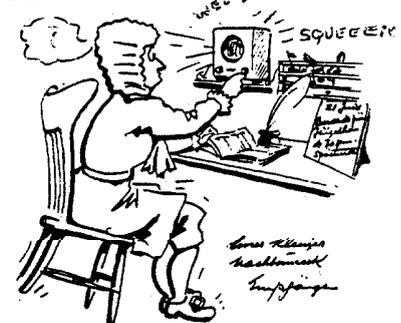
In the coming year we hope to have one or two new items which will, we hope, be of interest to members.

The special Auction meeting last year proved very popular, so much so that in 1992 we shall have two of them. The first, on March 8th, will also include the Annual General Meeting of the Society. Any nominations for election to the Committee should be in before then.

The Society's Constitution had become out of date and required "tidying-up" in many ways. A final draft has now been agreed by the Committee and will be available to Members before the A.G.M. At the June Harpenden meeting we hope to include a competition for Replica receivers. These should be built by the entrant (not re-built!) must conform to a published design, and use period components. Quality will be rated before elaboration, and the usual two-valve battery receiver will have the same chance as, for example, the Skyscraper Seven. It is hoped that the sets entered will be used for the usual display in the small hall. A prize will be awarded for the best "home brew".

One of our facsimile catalogues is in course of preparation and should be ready in the early part of the year. This re-print will be up to our usual high standard.

It is hoped that during the coming year the West Country meeting will be resurrected. Particulars will appear in the Bulletin as soon as they are available. Geoffrey Dixon-Nuttall.



Norman Jackson's cartoon commemorating the Mozart bi-centenary depicts the composer tuning-in a German Peoples' set, and obviously having difficulty with notating squeals.

Inside the Round Ekcos

by Geoffrey Dixon-Nuttall

The round radios produced by Ekco have had more fame than they deserve; the saucepan shape was very original, and much loved by students of design, but it was not really a very sensible shape to make a wireless set!

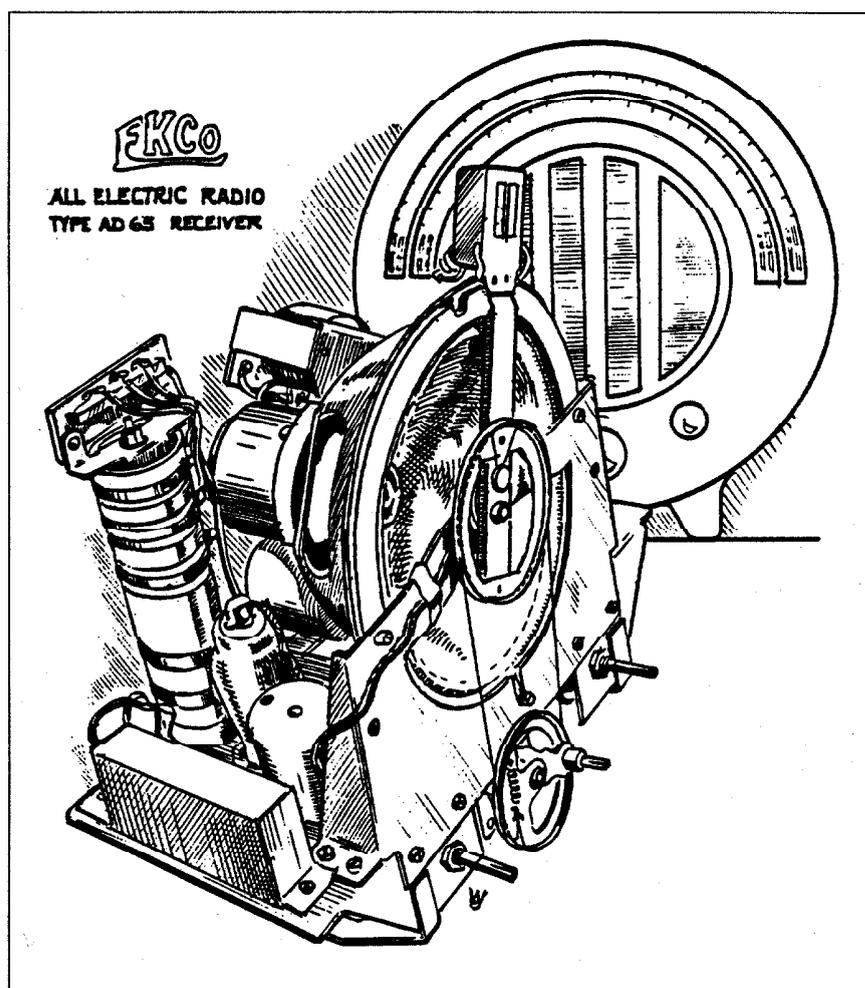
These sets fetch absurd prices these days, but this is entirely because of the cabinet design, and the circuitry is not really of much interest to the buyers, in fact it makes little difference to the price whether they work or not. This is a pity, because the chassis of some of them is just as interesting as the case - more so in my opinion.

The first model to be produced was the AD65. The case, of course, was designed first, and the set had to be fitted into it. With a cabinet this shape you have a choice; either you use a vertical chassis, or you have a small horizontal one. Ekco tried both, as we shall see, but for the AD65 they used the latter.

It had to be AC/DC, because they didn't have room for the transformer. Three valves only; it was a mid-price set, so a superhet. As high-slope output valves had not yet come along, they made it a reflex to make sure there was enough gain. The old low I.F. was used, so they had a bandpass input to reduce the images.

It's basically quite a simple set, using the screen grid of the pentode as the anode of a triode to amplify L.F. This means of course that this triode is also controlled by the A.V.C. action, which would have given improved control.

But for some reason the volume control varies the gain of the I.F. stage instead of the input to the L.F. stage, as is usual. This is probably because they were afraid of overloading the I.F./A.F. amplifier. Whatever the reason, it effectively sabotages the A.V.C., which only works at settings of the volume control approaching overload of the output stage! It was hardly worth bothering. Apart from this the performance is quite good. The ones I have heard seem to have a slight distortion, but perhaps I was unlucky. Unfortunately, Ekco had trouble getting enough double diode pentodes, so had to use a separate



Drawing by Norman Jackson

double-diode. They also altered the reflex so that the L.F. output is taken from the anode of the pentode instead of the screen. Presumably to get more A.F. gain, or a bit of bass boost, a coupling auto-transformer was fitted.

One of the features of the cabinet design is the dial, which is around the speaker. Ekco made this work by mounting the pointer in front of the speaker. This means that the speaker does not touch the cabinet, and there can be no baffling.

The next year (1935) produced a new model, the AD76. There was also an AC76; by using the vertical chassis they found room for a mains transformer. There is a small horizontal chassis as well, but there is nothing on top of it; its chief function is to support the sockets.

This is a very interesting circuit, because as well as the reflex it has a clever and original "silent tuning" device. This works very well and uses very few extra components.

The "Silent Tuning" Circuit

The level at which signals can be received is set by R7, which is marked "Stations Pre-Selected: All, Medium, or Strong". This adjusts the voltage on the cathode of V3. It will be seen that this biases the signal diode in reverse, as its anode is returned to chassis. The A.V.C. diode, on the other hand, is returned to the top of R6, so that the A.V.C. line is positive. This drives V1 into grid current. It does not affect V2, as this is biased by R5.

Any incoming signal has to get past V1, which is damping the input circuit due to grid current, and then overcome the reverse bias on the detector. Once it succeeds, however, it will at once start to reverse the A.V.C. voltage, causing V1 to operate properly. (Note that there is no delay on the A.V.C. anode). Further, the A.V.C. voltage is amplified by V2, as it is applied between grid and cathode. This will reduce the cathode voltage still further. Thus, once a signal has

Continued >

Research

> continued

got through, it tends to reduce the reverse bias on the detector.

This is all very clever, but it can cause strange troubles in its old age – apart from giving the service engineer a nasty surprise when he finds about ten volts on V2 cathode. A “soft” pentode can also produce havoc.

This circuit works very effectively, and gives a weird feeling when operating the set. Most of the dial is absolutely silent, and the few stations available pop out strongly. Note that this set has its volume control in a sensible position, (in fact it is tone compensated as well) and that the output from the A.F. amplifier has gone back to the screen: this is in all respects an improvement on the AD65. They also had another think about the dial; on this model the pointer is mounted behind the speaker, so that at least half of the speaker is baffled. (The cabinet touches the speaker all

round, but the top half is cut away for the dial). This set has quite a good performance – the best thing one can say is that you wouldn't know it was a reflex.

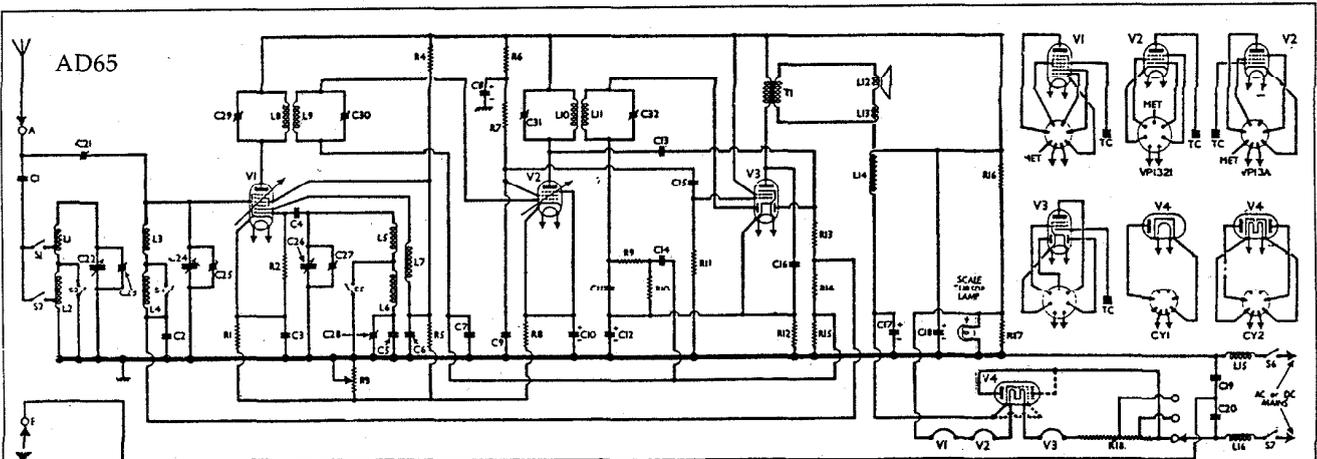
The same year also saw a small round set, the AD36. After the problems with the larger sets this was easy. It is a simple three valve T.R.F., with reaction. The only slight point of interest is the cunning Ekco volume control which they had used on other models, such as the M23. This feeds signal in anti-phase to the aerial coupling winding, so as to reduce the volume on locals.

The last pre-war round set was the AD75. This came out in January 1940; presumably it was in the pipeline and they already had most of the parts. This was a superhet based on the AD36, with the low dial which got over the problem of baffling the speaker. It was a straightforward short superhet. As the I.F. was 480 they managed without a bandpass input,

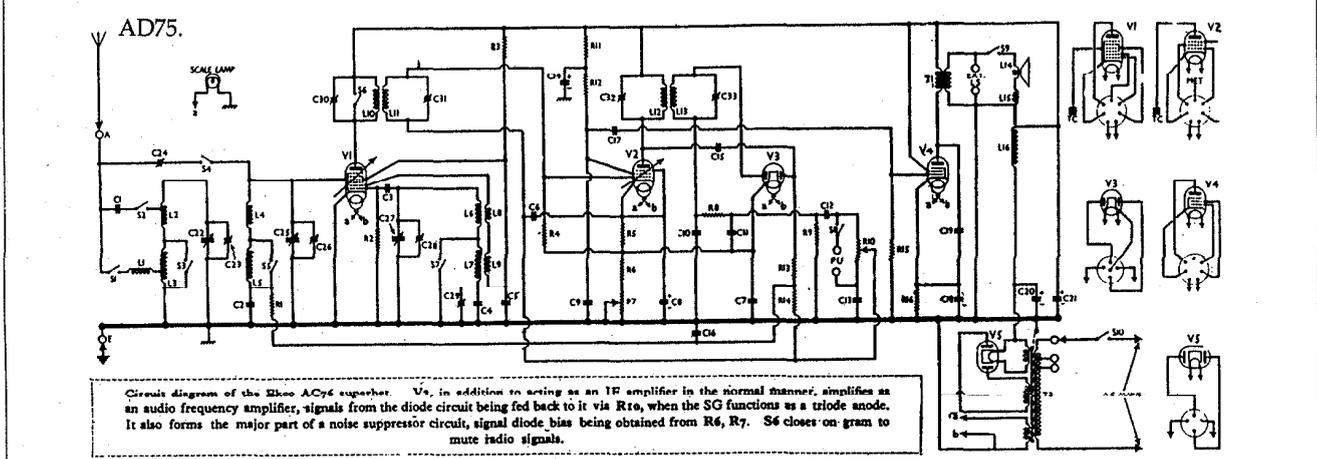
and everything fitted on to the small horizontal chassis with no trouble. This set also re-appeared after the war in almost exactly the same form. It even had the prewar dial! The main difference was the use of octal valves instead of the side contact set.

The postwar A22 was very similar, with no circuit interest whatever. When it first came out it had negative feedback, but this was soon abandoned! The speaker in this set is a long way back from the cabinet front, and any baffling effect is due to the chassis. Components are spread all over the set, so as to forestall complaints of inaccessibility. Like all postwar Ekcos, it was very nicely made; they learnt a lot from their war work.

For some reason this model is the most highly priced of all the round sets, but for my money I would rather have the crafty AC76. You get a more interesting set and you save about a hundred pounds!



Circuit diagram of the Ekco AD65 AC/DC superhet. R3, below the chassis line, is the manual volume control. AF signals are fed back from R10 in the diode circuit to V1, which then amplifies them as a triode and passes them on from its screen load R7 to V3 pentode. One half of V4 is shown dotted as this valve may be a single or double channel rectifier. Valve base connection diagrams are shown on the right for the alternative types for V4, as they are also for V2.



Circuit diagram of the Ekco AC76 superhet. V1, in addition to acting as an IF amplifier in the normal manner, amplifies as an audio frequency amplifier, signals from the diode circuit being fed back to it via R10, when the SG functions as a triode anode. It also forms the major part of a noise suppressor circuit, signal diode bias being obtained from R6, R7. S6 closer on gram to mute radio signals.

Transmitter history

Daventry 5XX

By Derek McCormick

As a child growing up in the late fifties/early sixties in the quiet market town of Daventry, deep in the heart of Northamptonshire, long summer holidays from school gave ample time to contemplate the huge steel masts rising above Borough Hill. At that time no large housing estate had crept up the side of the hill to nearly meet those masts and my friends and I were more or less at liberty to roam around the fields up to the perimeter of the B.B.C. station.

Armed with a pair of ex-government DLR5 'phones, GEX34 diode, a Jackson 0005µfd variable capacitor and a coil of wire – all wired bread-board style to brass terminals – there was something fascinating in being able to attach a croc-clip to the nearest stock fence and hear both words and music; a fascination with radio has stayed with me ever since and I for one will be sorry to see the end of an era at Daventry.

In April 1992 the B.B.C. Transmitting Station at Daventry will close as a result of a reduction in requirements by a branch of the United States Information Service "Voice of America"; World Service programmes are to be transferred to Woofferton in Shropshire and by the time this article is read it is expected that dismantling on the present two-hundred acre site will be well under way.

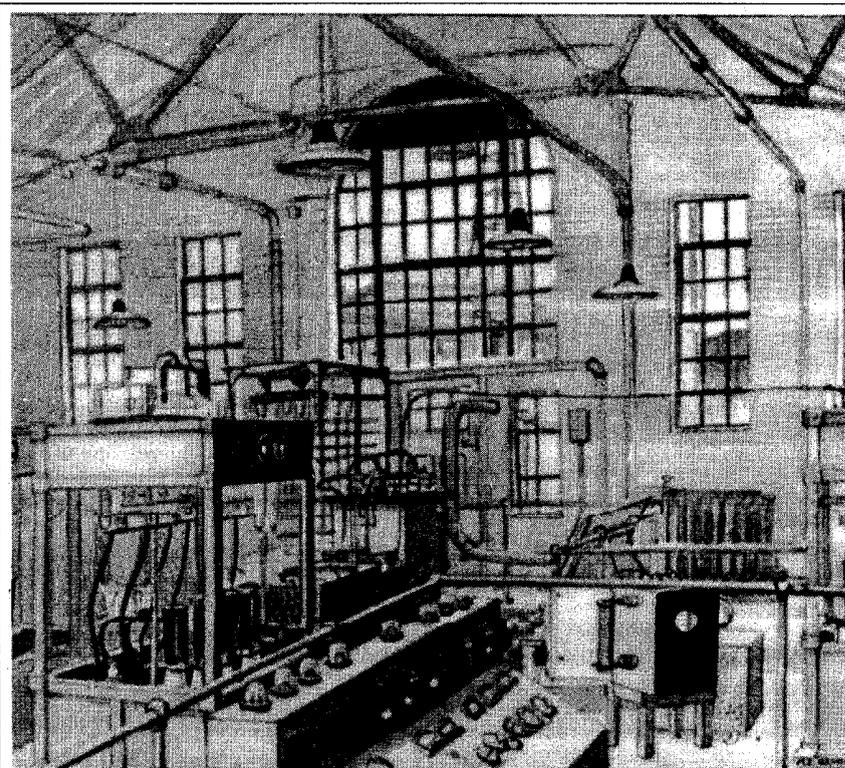
The station will continue to be used as a maintenance base serving the B.B.C.'s domestic radio and T.V. transmitting stations in the area; and of the fifty-five staff it is estimated at the time of writing that thirty to forty will lose their jobs.

To chart the whole history of transmissions made from this famous site would take considerable time and so I have concentrated initially on what is perhaps the most important aspect of the site in terms of transmitting history – that of 5XX.

5XX The High Power Station

Monday, July 27th, 1925 was the day on which the British Broadcasting Company's twenty-first station was to open; 5XX, the high power station at Daventry.

Borough Hill (an ancient Roman encampment) had been chosen as its



"The Old Gentleman" as the Daventry 5XX transmitter was locally known, was built in 1925 and this drawing was made by the artist Margaret Hammond in 1949 and depicts the transmitter in a partly dismantled condition after years of faithful service. The picture comes from a postcard issued at Christmas 1949 by the BBC Daventry Club, which quoted the poem written by Alfred Noyes for the 1925 opening ceremony: "You shall hear their lightest tone, stealing through your walls of stone, till your loveliest valleys hear the far Cathedral's whispered prayer. Daventry Calling . . . Daventry Calling . . . Daventry Calling . . . Dark and Still."

location for a variety of reasons; the B.B.C. wanted a site which had within its coverage area the largest proportion of land to sea, and in fact a circle of 100 miles radius drawn around Daventry touches the sea only at three places. But other conditions were necessary: the site had to be:-

- 1) As high as possible above sea level.
- 2) Near to main roads and a railway to enable heavy loads to be transported to site before the masts were built (railway bridges had to be strengthened to cope with these loads).
- 3) Reasonably flat over about 30 acres.
- 4) The ground to be suitable for mast foundation and "wireless earth".
- 5) Water had to be available.
- 6) There had to be some easy method of obtaining electricity.

All the above conditions were reasonably fulfilled by Borough Hill; the height is 650 feet above sea level, there was a flat plateau of 58 acres and roads and railway were close by.

Building work was started before the end of 1924. Total floor space was

7,424 square feet comprising the transmitter housing; the main wireless room; a machine room; studio; amplifier, battery and instrument rooms; together with two offices (3,260 square feet were taken up by the actual transmitting apparatus).

Masts and aerials were provided by the Radio Communication Company Ltd; the height of the masts was 500 feet, putting their tops much higher than any hill in the Midlands and a quarter the height of Snowdon; triangular in shape, they moved some 7 to 8 feet out of perpendicular in a strong wind and each one weighed 45 tons; on opening day each was topped with a Union Jack.

Captain P.P. Eckersley (B.B.C. Chief Engineer) wrote at the time: "The masts are placed 800 feet apart and the 'power house' itself is placed centrally between the masts. A "T" type sausage aerial has been erected, the horizontal portion of which is 600 feet long and contains ten wires, while the vertical portion contains six, the hoops holding them being 5'6" in diameter."

Transmitter history

> continued

Later on the opening day, newspaper reporters were invited to climb a ladder within a steel triangle in the pouring rain; but they declined, one saying that "We preferred to marvel at the delicacy of the foundations of the great masts which are pivoted upon small steel balls which, placed in the centre of the base plates, permit the masts to sway in the wind; with the clouds rushing by, not one of us regretted our refusal to climb the ladder."

A neatly printed eight page booklet, bearing on its front page the seal of Daventry and "A Prospect of Daventry and Borough Hill", gave the itinerary for the opening day headed with a quotation from Shakespeare's Henry VI, Part III:

*"Where is the post that came from Montagu
By this at Daintry, with a puissant troop?"*

and then ran as follows:-

Euston Station: The Chairman and Directors of the Company will receive His Majesty's Postmaster General and guests.

4.50 p.m. Special train will leave (tea will be served on train). 6.20 p.m. Arrive Daventry, motor coaches will meet the train and convey the party to the new transmitting station at Borough Hill.

(Flags hung from the windows of houses and shops, and the Mayor and Corporation of the ancient Borough were present at the railway station to greet the arrivals).

6.40 p.m. Arrive Borough Hill; on arrival at the site of the station the party will be conducted on tour of inspection of the buildings and machinery.

Let us at this point in their itinerary make our own 'tour' of the station using extracts from a description of the "apparatus" given by the Rt.Hon.F.G. Kellaway, Chairman of Marconi's Wireless Telegraph Company Ltd., who supplied the transmitter, - together with programme input equipment from Western Electric:

1) The Independent Drive

"This unit comprises two air cooled rectifying valves type MR9 and one water cooled oscillator, type CAT1. The rectifiers are arranged for full wave rectification and supply direct current at 10,000 volts through the

usual smoothing circuit of the oscillator anode. The drive oscillatory circuit is constructed of a pair of copper strip inductances astatically connected to reduce the external field, and an air dielectric condenser shielded by a metal case.

Plate input to the drive oscillator is about 8kW, which is an unusually high ratio of the power supplied to the magnifier, but this permits of securing the necessary magnifier grid excitation with a very loose coupling, resulting in negligible reaction back on the drive and consequent freedom from frequency variation with variation of magnifier input".

2) The Magnifier

"This is formed of four water cooled rectifier valves type CAR2 and three water cooled oscillator valves type CAT1.

The oscillator valves are capable of dealing with an input of 30kW at 10,000V and in this station are normally operated at 10,000 volts with

a plate current of 2.5A. Filament input is the same for all the water cooled valves used, namely 1kW each at 20V, 50A.

The oscillatory circuit of the magnifier consists of an inductance of stranded cable and a shielded air condenser. The grids of the magnifier are excited inductively from the drive circuit, the direct grid current required being about 300mA for the three valves. The grid circuit includes an anti-reaction coil which is inductively coupled to the plate inductance in such a manner that the internal valve capacity coupling is neutralised, so that it is not possible for the valves to operate as a self-oscillator if the drive excitation is removed. This adjustment is an important factor in securing stability of working and constancy of wavelength. The closed oscillatory circuit of the magnifier is inductively coupled to the aerial tuning inductance which is of the same stranded cable as the closed circuit coil".

3) The Modulator

"This portion consists of four water cooled rectifiers type CAR2 and six water cooled modulators type CAM1. The modulating valves are similar in size and appearance to the oscillators, but have a much more open grid mesh with a low amplification factor.

The modulator is worked with plate voltage and current equal to that of the magnifier, the current being adjusted by the setting of the grid negative voltage. For normal working this setting is between 1200 and 1300 volts negative, thus a large grid sweep is possible during modulation without running into grid current.

Condensers for the smoothing system consists of zinc plates with glass dielectric, oil-immersed in porcelain containers. The total capacity used on each half of the circuit is approximately 3.5ufd and the inductance about 16H. Smoothing inductances are closed iron core chokes placed in oil tanks; each choke contains about 5cwt of iron and there are eight of these in all".

4) The Sub-Modulator

"This consists of an air cooled valve type MT7B, operated from the same H.T. source as the main modulator, and coupled by resistance and capacity to the grids of the modulator

valves. The grid of the sub-modulator is in turn coupled by the same method to the sub-sub-modulator, which is a block of four LS5A valves supplied by 400V from accumulator batteries and with accumulator-heated filaments.

Land line amplifiers are situated in a separate room removed as far as possible from the high frequency apparatus, and are adaptable for amplifying either the audio frequency currents coming over the land lines from London or those from the microphone in the local studio.

The arrangements made for water cooling the valve anodes deserve attention. As the anodes are at high potential it is necessary to insulate the valve water-jackets from the main supply of water: this is accomplished by running the water both in and out of the jackets through spray nozzles. The water spray forms an almost perfect insulator, and therefore no loss is sustained by leakage.

As it is important to use cooling water free from lime or other ingredients capable of forming a deposit on the anodes, rain water is utilised and arrangements are made to drain water from the roof into a storage pond, a rainfall of one inch giving about 1000 gallons to the pond".

continued over >

Transmitter history

> continued

(In practice all the water cooled bright emitter valves, which had a life of approximately 2000 hours each, were frequently washed in dilute hydrochloric acid to remove limescale etc; and then hosed down with distilled water. The words "Coming through!" were often heard on the station as an engineer cradling what was then a very expensive valve (approximately £80 each in 1927) made his way through the doors).

"The apparatus for controlling the power input to the various sections of the transmitter is mounted on one control table placed in such a position in the wireless hall that the shift engineer at the control table has a clear view of the valve panels and the various indicating instruments that are mounted on it. On the control table are mounted the exciter field rheostats of all the alternators and dynamos so that the machine can be brought up to the required voltage from there.

Magnetic trip switches enable any particular machine to be cut off at quick notice if necessary, and a master switch is available which when opened stops all the machines generating, except the filament lighting dynamos.

All of the H.T. wireless apparatus is enclosed by a metal railing, the gate of which has a safety switch to cut off power when opened. If for any reason the drive should cease oscillating the set is automatically shut down.

A wavemeter with visual indicator on the control table keeps the shift engineer informed as to the wavelength constancy and can show half a metre variation from the correct value."

On completing their tour of the station dignitaries and guests crowded into the small studio (which would not normally have been used by artistes except in the case of breakdowns at other stations) the ceilings and walls of which were draped with calico which had been specially treated to reflect back sound waves: in the centre of the room, slung in a Sorbo-rubber cradle, was the microphone.

Amongst the assembled crowd, besides the Postmaster General and the then Mayor of Daventry Councillor J.H. Johnson, were Sir Henry Bunbury, Mr. R.A. Dalzell, and

Colonel T.F. Purves (of the G.P.O. staff), Sir Francis Ogilvie and Mr. F.J. Brown (Advisory Committee members) and Mr. E.H. Shaughnessy OBE. (Assistant Engineer-in-Chief).

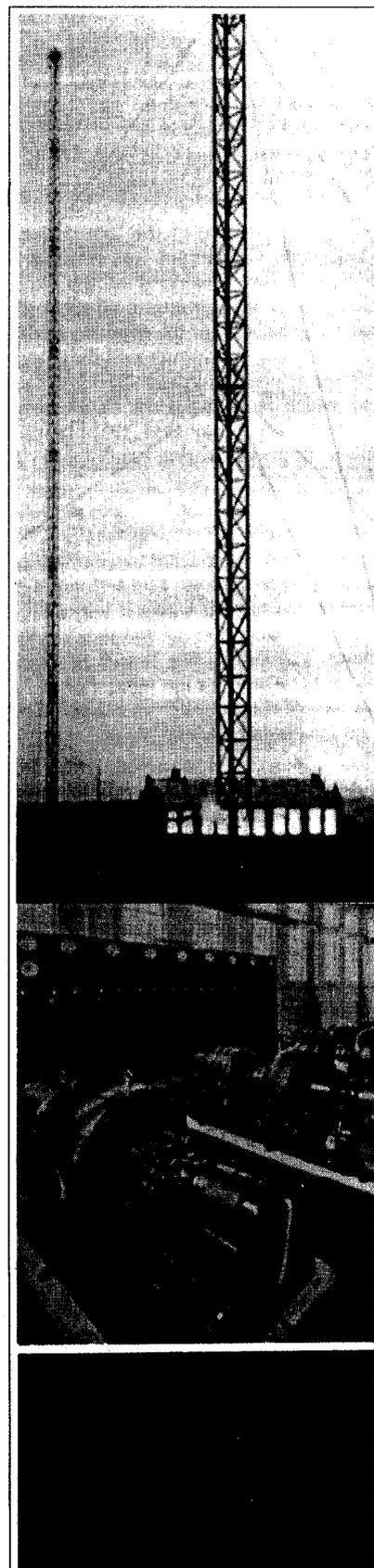
The B.B.C. was represented by the Rt.Hon.Lord Gainford P.C. (Chairman), Mr. J.C.W. Reith (Managing Director), Major Basil Binyon, Mr. John Gray, Sir William Noble, Mr. H.M. Pease, the Rt.Hon. Sir William Bull, Bart., M.P. (Directors) Mr. Guy V. Rice (Secretary), Admiral C.D. Carpendale, C.B. (Controller), Captain P.P. Eckersley (Chief Engineer), Major Murray (Director of Publicity) and Mr. C.A. Lewis (Organiser of Programmes). Local representatives were the Town Clerk, Borough Surveyor, the Rector and the Postmaster of Daventry.

Shortly before 7.30 p.m. Mr. Reith asked for perfect quiet: a minute later a red light over the studio door sprang into life and those assembled heard the words which brought to some a sense of achievement and to others a feeling of civic pride as Mr. Reith spoke the words "Daventry Calling" (which were radiated at a power of 25kW on 1600 metres) and then briefly introduced the new station to the unseen audience; he then read the poem 'Danetree' especially written for the occasion by Mr. Alfred Noyes.

Mr. Reith then discussed the somewhat vexed question of the pronunciation of 'Daventry'; "The majority of the English-speaking world would", he said, "now meet the word for the first time and would probably pronounce it as they saw it spelt. American friends would reject 'Daintree' with scorn, and the B.B.C. therefore felt justified in calling their new station Daventry". The Domesday Book spelling is 'Daventri', indicating that the earliest pronunciation of the name was 'Dav-en-try' and not the local pronunciation 'Dane-tree' which probably arose from the handing down of the legend of the Danes and the tree.

A letter was then read by Lord Gainford from the Prime Minister Mr. Baldwin who wrote "It is not too much to say that broadcasting is already contributing appreciably to the happiness and knowledge of the

continued over >



The top picture shows the two masts at Daventry and centre is the original machine room. The picture at the bottom is of the date stone above the entrance to the building.

Transmitter history

> continued from previous page

present generation. The opening of the Wireless Broadcasting Station at Daventry, the highest-powered station at present in the world, will give no less than twenty million people the opportunity to receive both education and entertainment by means of cheap and simple apparatus, and I look upon Daventry as another milestone on the road to the social betterment of our People".

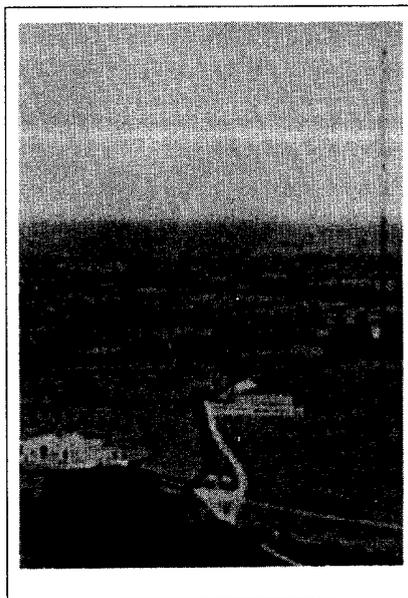
Lord Gainford then reflected upon the fact that "now Daventry is working, about 90% of the U.K. population is within crystal range of one or more programmes" and stated that the next step was to make alternative services available to as many people as possible: he did not consider the 60% that were then provided with alternative services to be sufficient. He then introduced Sir William Mitchell-Thomson, the Postmaster General, who during his speech made reference to the fact that "The crystal area of Daventry contains a population of more than twenty-two million people and includes Manchester in the north, London in the south-east, Ipswich in the east, and Cardiff in the west. Those who have one-valve sets should be able to receive Daventry within a radius of 150/200 miles, while possessors of multi-valve sets should receive it in any part of the country".

Finally, to applause, Sir William declared the station open and handed over to Captain Eckersley who made a statement as to the capabilities of the new station and who was in turn thanked by Mr. Reith.

To round off the speeches, the Mayor of Daventry then gave a history of the town and concluded (prophetically) that "Messages will soon be sent to all parts of the Empire".

Thanks were then proposed to all by Mr. Reith and, at 8 p.m. after a short interval, a programme of music from the studio in London was received through loud speakers, beginning with the 2LO Military Band conducted by Dan Godfrey Jnr. playing Elgar's Pomp and Circumstance march, and following with some solo artistes.

After refreshments the London parties were conveyed back to Daventry railway station by motor-coach.



Aerial view of Daventry

Judging by local papers of the time, sales of crystal sets increased enormously, the papers carrying a large amount of advertisements for the numerous types available, not least of all the "Lowke Dane Tree", a locally produced crystal set manufactured by Lowke and Sons (Engineers) Ltd. of Abington and Kingswell Streets, Northampton who became the famous model-making company of Basset Lowke. Priced at 35/-, with 'phones from 5/-, this set was available in Daventry from Freeman and Masters Ltd, a garage on the corner of Sheaf St. and New St.

In conclusion I would like to add my own comment that it will be a very sad day for Daventry when the red lights now on top of the masts on Borough Hill, known to travellers from all over the world, are finally extinguished; for it was the B.B.C. and its engineers that really put Daventry on the map.

Let us hope that some of the hardware from the present station will be preserved, and not sold off for so much scrap as has happened so often before, particularly with 5XX when it closed at the Daventry site.

Thanks are due to the following B.B.C. engineers for the generous help and information given to me whilst writing this article: B.T. Ahern, R.B. Boughton (rtd), D.A. Dymott.

* This is a shortened version of the original article. Anyone who would like a copy of the full version should send an A4-size stamped addressed envelope to Derek McCormick at 7 Littleworth, Nr. Duncote, Towcester, Northants NN12 8AL.

Technical history

The source of the Electradix "Onemeter"

by Desmond Thackeray

Retailers of "own brand" products generally avoid revealing their manufacturing suppliers, though in the packaging (of food for example) there are sometimes visual clues. In vintage wireless likewise, near-identical items may turn up with more than one brand-name and/or purely cosmetic variations. In the case of imported goods however, one suspects that xenophobia was an additional reason for trying to disguise the origin, particularly in the case of German goods during the decade following World War 1.

Be that as it may, information from BVWS member Alan Douglas reveals that the "De Luxe Onemeter" promoted by Electradix was in fact the "Mavometer" of P. Gossen, a Bavarian firm who were advertising it without a price tag in 1926. Readers may recall advertisements for rather costly Gossen exposure meters, such as the "Lunasix"; and it remains a mystery why Electradix tried to retail a meter at the top end of the market.

Detectors

In exporting plug-in crystal detectors to Britain, Fritz Hofman (FRIHO) of Munich seems to have gone a step further by coining the seemingly meaningless and bogus-English name "Knivetown". The same name appears on the FRIHO 1 crystal set; but in that item "made in Germany" is revealed on upending the set. For the German market, "DRP" is found on the detector instead of "Knivetown". The French also sold Britain a patented detector, the "Excentro", with a near-identical design of eccentric mechanism to the German one but totally different in external details, such as flat lugs instead of plug-pins.

To my mind both detectors are eccentric in the sense of being "odd-ball"; and one wonders whether the xenophobic British wireless persons of the 20s were much influenced by the assumed brand names of items from Germany. Prices, as ever, were what mattered when wages started at about 25 shillings a week.

See the article by Colin MacKinnon "Electradix" & the Onemeter" in BVWS Bulletin 14:1, page 8.

Reporting Wireless in the 'twenties

Society member Stewart Valdar, whose father Lionel was a reporter on the London "Daily Mirror" in the early 1920's, has been researching the role of the popular newspaper in promoting wireless to the status of home entertainment in the days when most of the public considered it either a scientific toy or a music-hall joke. He recalls here some of his father's reports. Lionel Valdar volunteered to study radio and was appointed the paper's Wireless Correspondent to write a regular column.

The prevailing obsession with radio was reflected in major news stories in the first half of 1920 in the columns of the "Daily Mirror", then predominantly a paper for ladies, despite editorial claims to a universal readership.

On January 28 the paper reported "Messages from Mars?" (page 3, col. 4) saying that Marconi had detected extra-terrestrial radio interference with his signals.

Next day, on the same spot, the paper printed "American doubts the 'Mars Message' theory".

On March 5, an advertisement announced "A Lie by Wireless" a "thrilling new serial by Charles Proctor, the sudden terrible denial which was hurled across the Atlantic at an innocent man and like a stab of lightning blasted and shattered his whole career".

The commercial possibilities of the new scientific marvel were not ignored. On May 8 an advertisement appeared with a drawing of the man in headphones by radio apparatus and the verse:

*Marconi whilst out on the seas
Gets a message from Mars, if you please
S.L.C...S.L.C
It's as plain as plain can be,
They're wanting some Spring's Lemon Cheese.
(It should be noted that these radio stories concerned radio telegraphy (Morse Code) rather than telephony.*

The "Daily Mirror" made no mention of what must have been the historic 30 minutes concert by the Australian prima donna Dame Nellie Melba from Marconi's works at Chelmsford on

June 15, reported to have been picked up in Sultanabad, northern Persia, Madrid, the Hague, Sweden, Norway and Berlin. Marconi were utilising the 6kW wireless telephony transmitter on long waves that came into use in January 1920. National broadcasting from the British Broadcasting Company didn't start until November 1922, creating a new home entertainment, yet this was foreshadowed by Nellie Melba's rendering of "Home Sweet Home", punctually on 15 June, 1920 at 7.15 pm.

On March 10, on page 3, the paper reported "Ocean bank that made ship roll" a story of a novel experiment on the ex-German liner Imperator on the Atlantic doing banking business, for the first time, with a branch of London City and Midland Bank on board, in touch, of course, by radio.

But, for "The Mirror", and perhaps for all newspapers, the biggest radio story of 1920 occupied the whole of the front page of their issue for July 6: "Pictures by Wireless", claiming that the first such pictures had been sent to London from Paris in 1909. The day before, the "Daily Mirrors"s representative had been sent to Copenhagen to telegraph a portrait back to his paper. The "Mirror" claimed to have first experimented with photography by telegraphy 13 years earlier when Prof. Korn's process was introduced. The paper was exultant, following up the page one scoop with a headline on page 4 "Space annihilated. Great success of wireless pictures".

Reminiscences

by Brian Pethers

Have you ever noticed what a wealth of wireless apparatus is to be seen in old films? I have no doubt that there are those readers of the bulletin who, blessed with an encyclopaedic knowledge of old radios, sit there, rattling off year, model and manufacturer.

Although many of the sets are only to be seen as part of an out of focus background, shots often open on a close-up and then pull out to include the group of people listening. One example of this that is seen regularly in a television series, is the family's radio in "The Waltons" - a striking looking model which I am sure must have been identified by some member of the society?

Not only domestic radios make their appearance but also communications

equipment - in police control rooms, coastguard stations, and those wonderfully primitive and casual domestic airports, where the captain (who has a drink problem) is chatting unsuspectingly with the fellow carrying the bomb in his briefcase, the co-pilot (who is keeping quiet about his intermittent loss of sight) is trying to seduce the reformed prostitute, and the weather systems is building up over the mountains ahead!

Another item that appears in at least three decades of film making is the office wax cylinder dictaphone. Does anyone know when these were last used in offices?

The film "The Great American Broadcast", although fictional, contains many of the elements of early American radio to be found in the pages of Erik Barnouw's book "A Tower in Babel". These include the ex first world war serviceman's amateur radio station, progressing to the rooftop "studio", the coverage of a major boxing event, more permanent studios, and finally to the concept of networking (it also has Alice Fay!). The broadcasting of the fight has a number of similarities with the real life broadcast of the 1920 Carpentier/Dempsey fight in Jersey City - the aerial slung between railroad towers, the transmission from the porter's restroom, overheating equipment, and the early knockout.

Without a doubt, the freedom from government restriction allowed the early American radio experimenters, benefited the development of the technology in that country. The same was true of the telephone and of television.

My own interest in American communications technology goes back to when I was a child. There was, on the family bookshelf, for some reason I have never discovered, a copy of the 1934 ARRL handbook. Although I did not understand much of it, I was fascinated by the equipment shown and the strange words - antenna, tube, spaghetti (sleeving) and Tahnestock clips. There were also several copies of QST, from the same period. Apart from more of the same sort of material, one of these contained a humorous, fantasy article concerning a wicked character by the name of "Henry the choke" who spends his time gazing lustfully at the beautiful "Milli the amp".

One final point on films. Is the "signal" which accompanies the RKO opening titles "garbage", or is it real morse code?

Report/Looking back

Pat Leggatt of the
BVWS visits

The American 'Harpenden'

As a member of the Antique Wireless Association of America (The AWA) I have for some time wanted to go to one of their main annual meetings, now held in Rochester in upper New York State by Lake Ontario. So this year (last September) I went there, my wife being generous enough to encourage me in this, even though she could not join me on the trip.

I first spent a couple of days with my son and his family in Manhattan and then flew up to Rochester, staying in the Marriott hotel where all the meeting events took place. The meeting is a 3-day affair with a flea market running all the time in the three-acre hotel car park and the days filled with talks, discussion sessions, equipment displays, auctions and dinners. The AWA has about 5000 members and about 1000 were present in Rochester, so it's a really big do.

There was an hour or two of rain one day which upset the flea market, but otherwise the sun shone nicely. There were many stalls but not closely packed, so I suppose it was not all that much bigger than Harpenden in terms of number of stalls; but the individual stalls were much bigger and altogether there was a very large amount of equipment on offer covering of course the whole range from early 1920s onwards. Prices on the whole were appreciably less than we are used to, and there were many things that tempted me until I reminded myself that there is only a limited amount that one can economically bring back on the aeroplane! Nevertheless I did bring home a couple of nice things. One exception to cheaper prices was crystal sets, of which there were not so many around in America in early days: in the UK, of course, broadcasting was originally set up to bring the majority of the population within 'crystal set range', so there are relatively far more surviving crystal sets here.

The AWA was originally founded as a group of amateur radio enthusiasts and, while it is now open to anyone, the ham spirit is a very noticeable

binding force in the Association. Several of the talk/discussion sessions were ham related, which I did not attend since I am not of that fraternity, but there were other sessions of great interest on wireless history, equipment restoration, clandestine radio, etc. The special theme of this year's Conference was RCA and David Sarnoff.

An old equipment contest is a major feature of their meetings, with all sorts of different categories. I entered my Lodge-Muirhead Coherer in the Passive Receiver section and was most gratified to be awarded second place, with a pretty red ribbon to show for it! The old equipment display as a whole was a fascinating collection of many rare items beautifully restored.

A coach visit to the splendid AWA Museum was included in the itinerary. I was invited to a small private dinner of museum curators where I told them about wireless museums in the UK, public and private, and some elsewhere in Europe. I left a list of addresses so there may well be more American visitors in the future.

The main feature of the Friday was an auction covering valves, paper collectibles and general equipment which started at 9 a.m. and continued until 5 p.m., all conducted by one man, Bruce Roloson. He did it very expertly and made a real entertainment of it with many witty asides, often rather scurrilous!

The AWA have a number of annual Awards for outstanding contributions to various facets of wireless history and equipment preservation. The Association President, Bruce Roloson, paid me and the BVWS the very nice compliment of inviting me to present one, in this case the Houck Award for historical documentation: Sergeant Harry Houck, a founder member of the AWA, was Armstrong's assistant in France in 1917 when developing the superhet. This gave me the opportunity to say a few general words, including greetings and best wishes from all of us collector cranks in the BVWS to all the nuts in the AWA!

What then came as a big surprise was the presentation to me of the Taylor Award for preservation of television history: This resulted from publication in the AWA Annual Review of an article on Early Television in the UK which I wrote some time ago for our BVWS Bulletin Supplement. I suppose it wasn't too bad an article, but I certainly hadn't expected it to earn any particular honour!

What really made the whole occasion so enjoyable was the warm and friendly welcome I received from everyone there. One finds this of course in America in general, but the AWA officers and members couldn't have been kinder. Furthermore there is a great fund of experience and expertise in the Association and I had many very interesting conversations with many knowledgeable people. They really do go into things thoroughly and research their subjects to very high standards. Quite a few people said how much they had enjoyed our 1989 International Meeting and hoped we would arrange another before too long. I said perhaps we might do something in two or three year's time.

Lastly, an appreciation to the organisers of the Conference, Bill Fizette and Lauren Peckham, not forgetting Marianne Sibley and others on the administration. It all went like clockwork (except for the hotel lifts which I think must be powered by a team of snails) and I can thoroughly recommend it to anyone who might be thinking of making the trip. It does cost a bit of course, but it's money well spent if the piggy bank can stand it.

Looking back

Roger Snelling

From *Wireless World*
Mar. 2nd 1932:

"Killing the goose"

Broadcast advertising is not, perhaps, the only cause of the diminished interest of the American public in radio matters. According to a correspondent of the *Christian Science Monitor*, who visited the recent early-season's radio show in Chicago, the obvious "flop" is due to the greed of the manufacturers in killing the set-building hobby. "When the set manufacturers," he writes, "bent all their energies at crowding the home set-building idea out of radio, they did away with the egg-laying goose of public interest. The enthusiasm witnessed at radio shows in the build-a-set days has never been equalled. For each set built 100 were sold. Those home-made sets were advertising, publicity and sales calls all in one. But the manufacturers, afraid of losing a few sales, ended the idea. That was the beginning of the end of public interest in radio shows

Telefunken T9W Receiver

By D. J. Morris

The Telefunken T9W receiver was developed in the period 1927/28, the first "all mains" receiver marketed by the company - it was designed by Ernst Klotz and Eric Zepler.

Eric Zepler remained with Telefunken until 1935 when his opposition to the Nazi regime forced him to leave Germany for the U.K. Here he worked for Marconi, contributed to the design of the wartime 1155 receiver, and in 1949 became the first Professor of Electronics at what was then the University College of Southampton.

The receiver may be seen, and heard working, at a small exhibition arranged by Southampton University in memory of Professor Zepler.

The T9W is intended to work from AC mains. It is a five valve plus rectifier receiver comprising two neutralised triode RF stages, a grid detector with reaction, an audio amplifier stage and a power output valve. Three wave-bands are covered; 200-400, 350-700 and 600-2000 metres. The valves as described in the manufacturer's literature are type REN1104 for the first four stages, RE134 output valve and RGN1503 rectifier. As delivered from the Technical Institute of Bochum in Germany the valves fitted were REN904 in the first four stages, with RE604 as output; no reason for these substitutions is known. The output valve has a four-pin base which suggests (despite the circuit diagram) that it is a directly heated type or has an internally connected cathode.*

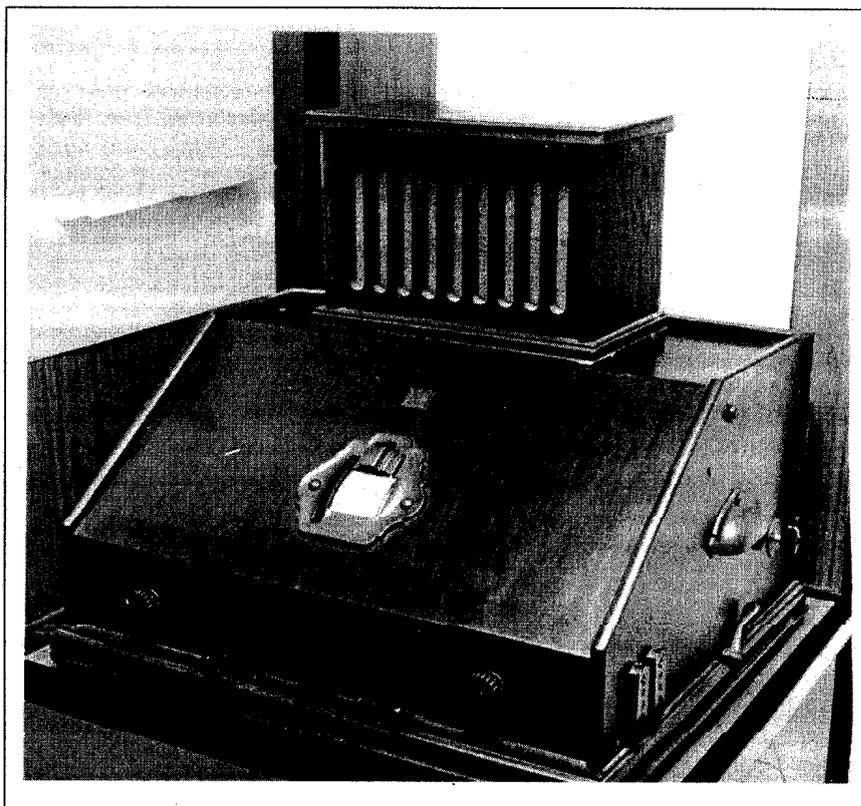
The circuit

The aerial is coupled to the first RF stage via a variable capacitor. Waveband changing is effected by switching in coils in parallel. Neutralising is accomplished by feedback from a tapping on the grid coil of the subsequent stage, the neutralising capacitors being pre-sets variable in the range 0-14 cms (15 pfd).

The gain of the RF stages is controlled by a rehostat in the HT feeds, made up of a bank of fixed resistors with a rotary switch.

The three tuning capacitors are ganged, the stators of those associated with the RF stages being rockable by an external lever for fine trimming adjustment.

Reaction round the leaky-grid detector is controlled by a variable capacitor. The detector is transformer coupled to the first AF stage, and gramophone pick-up sockets are wired across the primary with no isolating capacitors. I was puzzled by this until a colleague mentioned that the type of pick-up in



common use at the time was essentially a carbon microphone with the needle actuating the diaphragm: a direct current supply would of course have been necessary for such an arrangement. Grid bias, for all valves except the detector, is derived from a potential divider between HT- and chassis. An external loudspeaker is required. The one illustrated is clearly not the original.

Conclusion

Workmanship of the highest quality is everywhere apparent in the construction. The coils are contained in gleaming copper cans which have retained their lustre for more than 60 years.

In appearance the T9W is stark, no concessions having been made to styling. While the cabinet is a sturdy

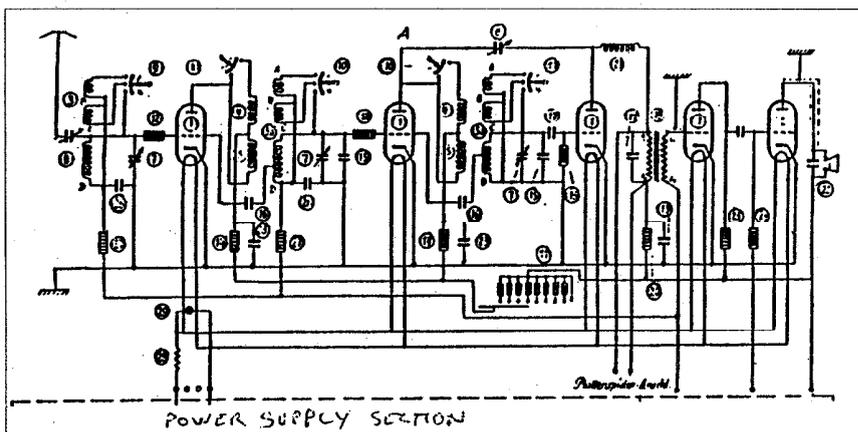
piece of carpentry, it seems that Telefunken regarded their receivers as industrial equipment rather than pieces of furniture.

The T9W was put on sale at 755 Reichmarks. To put this in perspective, when the Nazi party came to power they ordered production of the People's Receiver for sale at a no doubt heavily subsidised 35 Reichmarks, said to be the average weekly wage at the time.

Acknowledgements

I wish to thank Professor Barron, Head of the Department of Electronics and Computer Science at the University of Southampton, for permission to include information contained in this article; and Mr. Rodney Livingstone, of the Department of German, for information on social and economic conditions in Germany.

Editor's Note. Both the RE134 and the RE604 are in fact directly heated triodes.



Book review/Crossword

Book Review

'The men who made radio'

by Pat Leggatt

A most interesting book has just appeared in the United States entitled 'Empire of the Air', with the sub-title 'The Men Who Made Radio'. It is written by Tom Lewis, a Professor of English in an American college; and is published by \$25 by Edward Burlingame Books, an imprint of Harper Collins Publishers.

The author has taken the three leading players in early American broadcasting, Lee de Forest, Howard Armstrong and David Sarnoff, and tells a fascinating and detailed story of their origins, their careers and the mutual interplay of their ambitions and rivalries. The whole saga is full of drama and tragedy.

The origins of the three were very different and explain to some extent what drove them in their subsequent lives. De Forest's childhood in Alabama was modestly middle class, although burdened with his father's

obsession with religious and classical education. Armstrong had the most normal upbringing of the three in comfortable circumstances, first in Manhattan and later in the New York suburb of Yonkers. Sarnoff was born into a Jewish family in a remote Russian ghetto village in conditions of deepest poverty.

From an early age de Forest was carried away with personal vanity. On one occasion he wrote "I am actually amazed that I, a mere youth of 13 years, by my inventive genius - have succeeded where illustrious philosophers in times past have failed". This exaggerated opinion of his own talents was later to lead to personal antagonism and continuing litigation with Armstrong, who was by no means convinced of de Forest's intellectual ability and honesty.

Armstrong was a very talented inventor and engineer who lived rather naively by the principle that the true facts of a matter were all that really counted. He stubbornly refused to recognise that compromise was sometimes necessary to achieve his goals and suffered greatly as a result, to the point of eventual suicide.

Sarnoff was driven by the urge to rise above his early disadvantages and to prove that he was equal to or better than anyone else in the American Marconi organisation, later transmuted into RCA. His ambition was further fuelled by the anti-Semitism he had to contend with, and he pushed forward steadily to become General Sarnoff, President of RCA. Once there, he took it that the interests of RCA came above anything else and made enemies of de Forest and Armstrong in the process.

Tom Lewis tells of these three remarkable men, their achievements, their failures and their years of legal clashes with one another. He is an excellent story teller and, once opened, the book is hard to put down. The author has done most careful research and lists his sources and background notes very comprehensively, convincing the reader that this is a true picture of American broadcasting history. Descriptions of technical aspects are a bit questionable here and there; but this is of no real consequence since the book is biographical rather than an engineering treatise.

Although confined to the American scene, the events described had very significant impact on the development of British broadcasting. With 421 pages, the book will be excellent value for anyone with an interest in wireless history.

Wireless Crossword

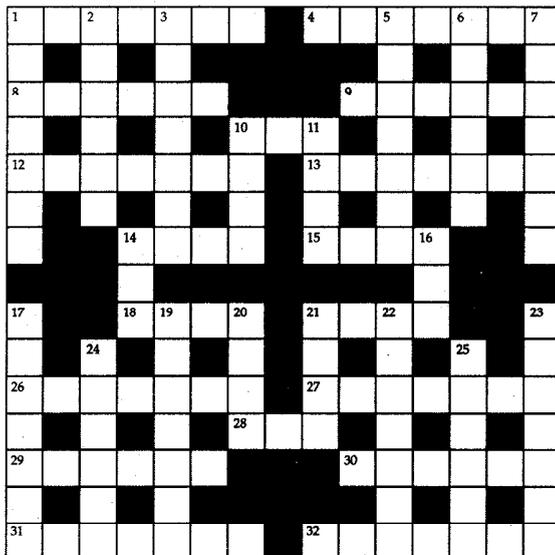
Here's an attempt at a crossword using a few "wireless words" of which there really aren't enough in our vocabulary. Readers who think they can do better are invited to contribute their efforts. (This one comes from Geoffrey Dixon-Nuttall).

Clues Across:

- 1. Death Co. upset and often heated.
- 4. U.S. inventor gets West Africa for nothing, makes valves.
- 8. A point between the wise, say; frothy!
- 9. Rarely seen damage to the Church.
- 10. Wet, with milk.
- 12. The Jolly Capone warms up.
- 13. Peacekeepers initially upped newly unloaded swans under a lock - that's odd!
- 14. Give out; time to go back.
- 15. Fishy; sounds as though they went high!
- 18. Nothing to write, Frank.
- 21. French priest has this of souls.
- 26. Spoil a late run by being uninterested.
- 27. Rest up a ruin in the field.
- 28. View that can be Magic.
- 29. Past act to excess.
- 30. Hallo Sailor! Gotcher!
- 31. Scrub, Lather 'n bewitch.
- 32. Point to the clergyman - he gets it up.

Clues Down:

- 1. Clear for reception.
- 2. Journey suits the composer to a T.
- 3. Best to reverse it after work, Ma.
- 5. Take in writing fluid (obscene) (say).
- 6. MRAW.
- 7. Unnecessary detail annoys.
- 11. Back up to a



- Rolls to hear this.
- 14. For example, nothing am I.
- 16. Litigious girl.
- 17. Imprisoned poem in a tube.
- 19. You can stay in this castle in Spain.
- 20. River that is blue and white.
- 21. What a Bishop can and wears.
- 22. Uneasy concerning the good man, I start to verify.
- 23. Orator can be loud.
- 24. Sounds like the signal to start the cricket most smartly.
- 25. Worker has gastric trouble before changing.

Answers at bottom of page 52

Restoration Tips

Readers are invited to contribute to this feature. Please send your tips to Geoffrey Dixon-Nuttall, our technical correspondent, at Longmeadow, Miles Lane, Cobham, Surrey, KT11 2EA.

No 8 Dial drive: Some dial drives use fine wire cable. This is difficult to get, but as a substitute try the wire sold for control line model aircraft. This is tinned and does not tangle, but is not quite so flexible; but it seems to work. It is also possible to use monofilament nylon as used by anglers.

No 9 Paint matching: The range of car aerosols is very useful. It is quite well known that a good match for Pye MM panels is Ford Roman Bronze. Ekco chassis can be repainted quite well with Ford Silver Fox never use aluminium paint as it is too flashy. Ford Rio Brown is a useful dark chocolate colour, for speaker frames etc.

Feedback

Letter

Eliminator design
from P. E. Smith

I was interested to read about your proposal to reproduce vintage battery cases.* If they are to be to the same standard as the Brown Bros. catalogue then I fully support the idea.

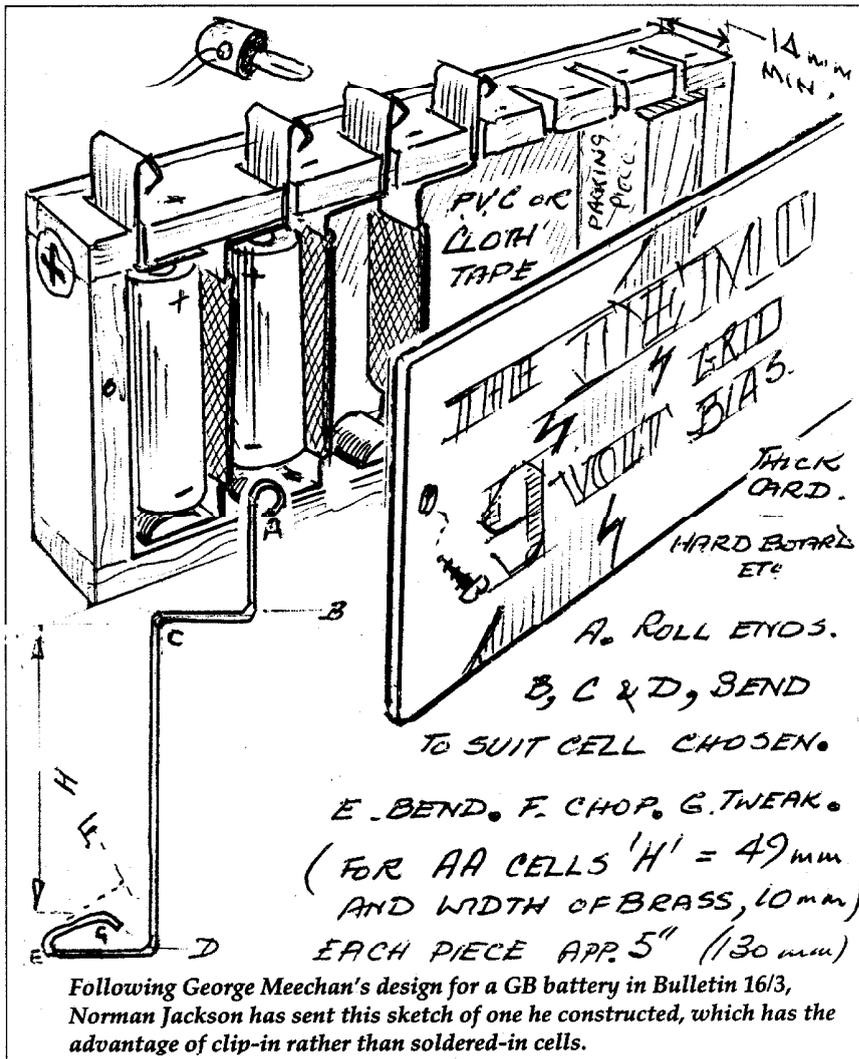
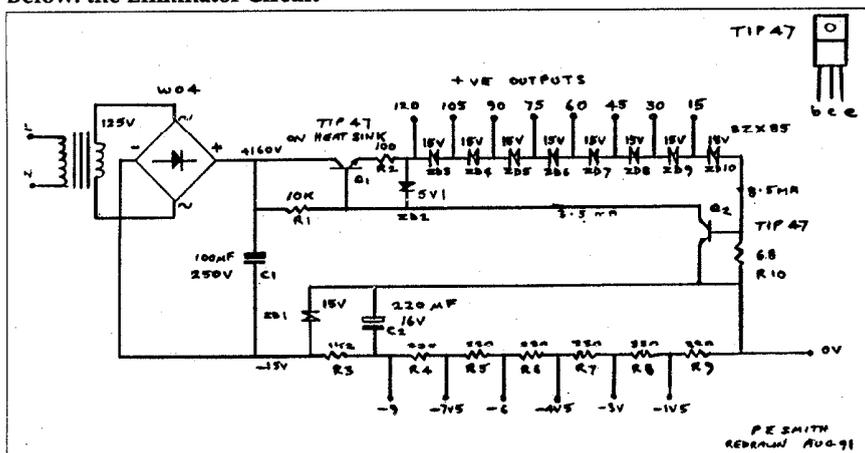
Several years ago I designed a universal battery eliminator and have built several to the same basic design. I have enclosed the circuit which may be of interest.

The design is simple in concept and has several useful facilities.

- (1) Transistor Q1 acts as a current limiter. The resistor R2 sets the limit to about 45mA.
- (2) The output positive voltages are set by the 15V zener diodes ZD3 to ZD10 and are therefore stable with varying loads. Different values of zener diodes could be used to obtain any output voltage.
- (3) The transistor Q2 controls the standing current through ZD3 to ZD10 at about 8mA. Resistor R10 can be increased to 330 if the grid bias circuit is not required.
- (4) The grid bias is derived across the 330R resistors R4 to R9, again these can be varied to obtain obscure voltages. The zener ZD1 stabilises the bias voltage when varying HT currents are drawn.
- (5) The transformer output voltage is not critical but at DC voltages above 180V R1 could be increased to reduce the current in Q2.
- (6) The transistors are well rated at 250Vce and cost about 80p each. The 15V zener diodes are 1.3WATT devices at about 20p each.

* We are still considering reproducing battery boxes of various voltages, but require to borrow some originals.

Below: the Eliminator Circuit



Letter

Did Edison miss the boat?

from Eric Westman

An extract from 'Family Magazine' of early 1892:

... While upon this subject we may add that Mr Edison proposes to telegraph between ships at sea by the intermittent currents from an

induction coil. Each vessel is to be provided with a coil for generating currents, a telegraph key for sending the message, and a receiving apparatus something like a telephone. A sheet of metal is to be suspended between the masts on board of each ship and connected to the telegraph key so as to be charged by the signal currents. The circuit will be formed through the water on one hand and the air between the sheets on the other. Thus two ships may telegraph news in sailing past each other without any connecting wire between them.'

What a pity Family Magazine did not tell us more about the 'receiving apparatus' something like a telephone'. And did Edison try out his idea - perhaps unsuccessfully?

Answers to crossword on page 51

- Across: 1 Cathode; 4 Ediswan; 9 Yeast; 9 Scarce; 10 Slop; 12 Thermal; 13 Unusual; 14 Emit; 15 Roes; 18 Open; 21 Cure; 26 Neutral; 27 Pasture; 28 Eye; 29 Overdo; 30 Hijack; 31 Enthalp; 32 Erector Down: 1 Crystal; 2 Travel; 3 Optimum; 5 Include; 6 Warmup; 7 Needles; 10 Slot; 11 Purr; 14 Ego; 16 Sue; 17 Pentode; 19 Parador; 20 Nile; 21 Cope; 22 Rootive; 23 Speaker; 24 Cutcut; 25 Mutant.

**BULLETIN OF THE BRITISH
VINTAGE WIRELESS SOCIETY**

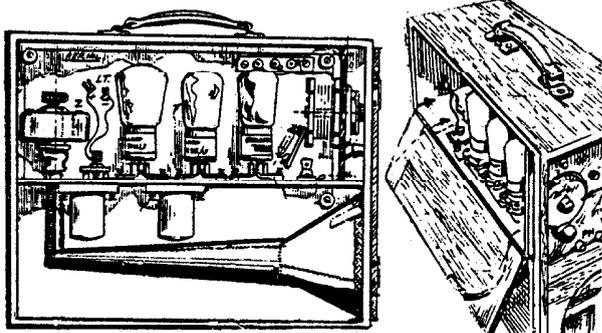
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Cover Story: The receiver illustrated is rare and unusual, identified only by the logo "T" on the loudspeaker-fret, and is thought to date from about 1923. It is the only example known to have survived. The nicely made solid red mahogany case has a leather carrying handle and nickel-plated fittings. A door at one end gives access to the simple controls and exposes the loudspeaker grille. At the side, a flap gives access to space for accumulator and batteries. The circuit is unremarkable but good quality components are used and a frame-aerial is concealed inside. The most interesting feature is a built-in loudspeaker with a beautifully constructed tinplate horn, folded to fit neatly inside. It was probably produced in a small quantity by a small cabinet-making firm and is likely to be one of the first receivers to have incorporated a built-in loudspeaker; the only other similar design British set of the kind was the one called "The Pelican". We should be pleased to hear from anyone who has further information about the makers of the set.



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