

# BVWS bulletin

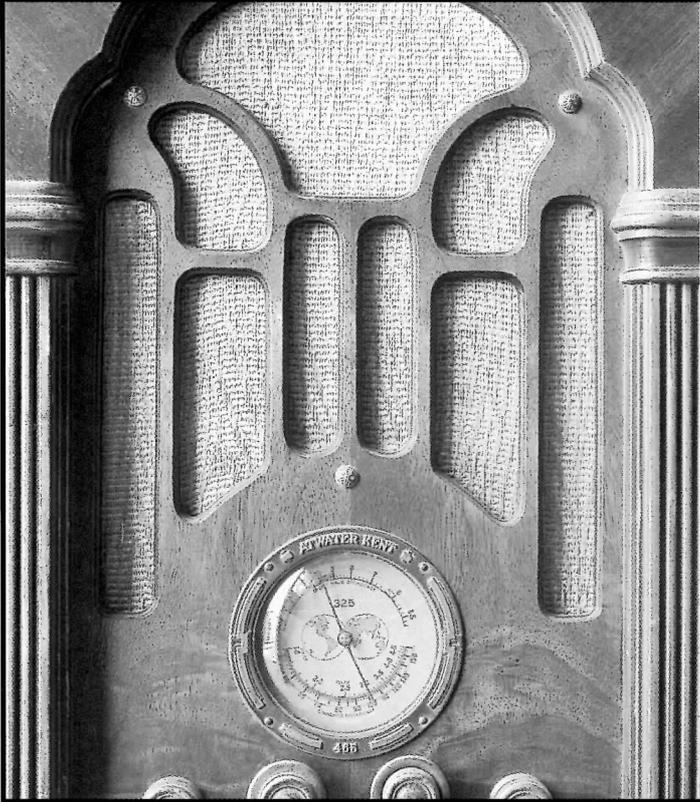
volume 22 number 3 Autumn 1997



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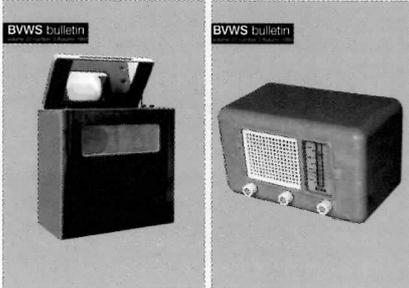
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Front Cover: Alba C112.  
Rear : Murphy A42V.

Front cover photography by Carl Glover  
Rear cover photography by Mike Barker  
Graphic Design by Carl Glover

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## From the chair

It is so hot in my room that I am sure that if I were writing this with an old fashioned fountain pen not ink but a trail of black steam would be issuing from the nib. As it is, I am using the trusty word processor. Let the electron take the strain! This may be a hot and sleepy time of year but business at the BVWS continues unabated. With regret I have to report two resignation both due to pressure of work. Terry Martini felt that he was unable to carry on the dual role of Minutes Secretary and Information Officer. I have written to Terry on your behalf to thank him for his past work on behalf of the Society. Mike Barker felt that owing to increased responsibilities at Plesseys he could no longer keep up his post of Membership Secretary. This was a particular grievous loss to the Committee not least because he put in place as soon as he took up office a highly efficient computer routine to deal with the minutiae of membership applications. I am pleased that he has agreed to stay on the Committee so that we shall not lose his good council. It is with a sense of relief that I can report that Pam Zimmer has offered to take over as Membership Secretary with immediate effect, and that her husband Andrew Zimmer has been co-opted



onto the Committee and has agreed to take over Pam's previous role of Events Coordinator. So we now have an extremely powerful husband and wife team on the Committee. Mike Barker has agreed to pass on his computer skills to the new team. Pat Leggatt has agreed to continue to take the Minutes and he will also complete the Membership List which was begun by Mike Barker. So all is well that ends well.

Of more concern is what is happening to our interest in the world at large. It is still unclear what the future holds for the Marconi Collection. We also now have to face the closure of the BT Museum (to save as Andrew Emmerson wrote in *Electronics World* 16 minutes worth of their annual profit). And what will happen to the BBC's collection (although some of this will no doubt be displayed in their £5 million Visitors' Centre), the material at Bletchley Park (Colossus and other) and the EMI treasures (now touring as 'Music 100')? It really is high time that this country establishes a National Museum of Information Technology.

Willem Hackmann

## Bonus pages shock

Some of you may notice that this issue of the Bulletin weighs more than the normal issue. This is primarily due to the fact that the magazine (for this issue at least) has gained an extra eight pages. These pages are paid for by the three

pages or so of advertising that the Bulletin now carries. If anybody wishes to advertise through the BVWS Bulletin please contact the Editor and he will arrange a space. This is probably the only way that we will ever get see a fifty four page issue of our humble magazine.

Full page adverts cost £180, half page £90 and quarter page adverts £45.

## Mike Barker no longer Membership Secretary

Dear Friends,

After much deliberation, I have decided to resign my position of Membership Secretary of the BVWS. This is mainly due to the enormous pressure of my work. I have held on as long as possible and the Committee have tried to make the burden of piles of post and many daily phone calls as easy as possible by taking on some of the tasks that I was once able to do in good time, and have recently been unable to give the attention they deserve.

I have found the position very rewarding with my introduction of new membership forms, different membership options, setting up the sale of Bulletin back numbers and making sure that the BVWS has a presence at all the radio events and in the various radio publications. I am confident

that the Society membership will continue to grow, as it has since I took up the position of Membership Secretary. I have been asked to remain on the Committee, and this I am happy to do for the foreseeable future. I will of course help out at all the events that I am able to attend, and will I hope still be of value to the membership as an ordinary Committee member, as there are still many things to do that I will be able to offer help and support with. I must however hand over all current responsibilities for memberships etc.

I would like to take this opportunity to thank you all for your patience and understanding during the busy times I have experienced, and would like to express my absolute confidence in my successor, Pam Zimmer, knowing that your memberships will be in safe hands!

Pam is well known to many of you and has volunteered to take up the role of Membership Secretary with great enthusiasm.

Mike Barker

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# Ekco's true colours

'Four remarkable receivers to bring you large profits in the coming year! Power and purity in the incomparable setting of a Chermayeff cabinet.'

by Robert Chesters

Evidently Ekco were impressed by this set. For some reason wireless collectors don't seem to be. Perhaps I can change your mind.

A quick check through the Ekco programme for 1936/37 identifies the AC77 as being one of a range of receivers available in a 'magnificent moulded cabinet'. Most long-term collectors will have seen it before, and some may even remember it being new. Usually, the cabinet came in brown bakelite or black with ivory knobs and is today hard to find in perfect condition. It is, in my opinion, a seriously underrated wireless.

below: The Ekco stand at the British Industries Fair circa 1937/38. From left to right the sets featured are: AC85, AD65 (both 1934), AD38, UAW78 (or BAW78, BV78- 1937), AC97 (1936), a Radio Rentals cabinet of 1935), AC77 (or AD77, B67, BV67, AW87), AD37 (1936), AD36, AC86 (both 1935)



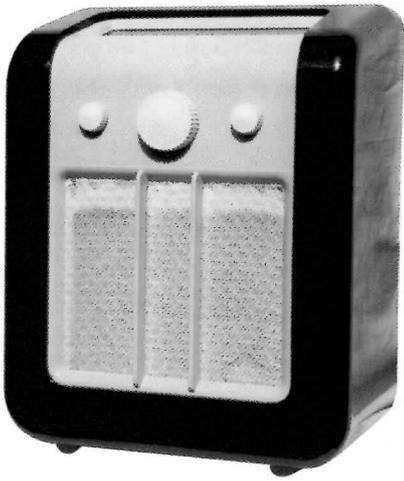
What makes this example of special interest is that it is one of the few coloured pre-war cabinets that saw anything even approaching commercial manufacture and was assembled and marketed in Belgium. Although it is not a creation of Victor Horta it does boast an architect-designed pedigree. The Ekco catalogue proclaims proudly: 'Magnificent moulded cabinets - in walnut or black and ivory. New design by famous architect Serge Chermayeff'

"So what?" I hear you snort.

Serge Chermayeff was a key figure in the modern movement in Britain. He worked with Eric Mendelson on the plans for various public buildings and was a friend and neighbour of Walter Gropius, the former head of the

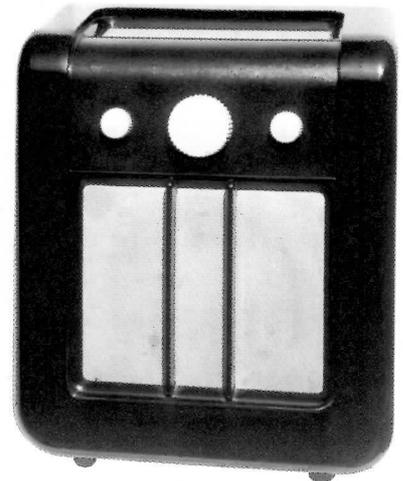
Bauhaus design school. Chermayeff's most famous creations for Ekco were the AC 74 and the AC 86 (the 'Dougal' set). He was also the first architect/designer to receive a commission from Ekco and his success was such that the futuristic AC 74 managed to sell 120,000 units in 1933 and 34, which was no mean feat for a wireless that looked as though it had escaped from Dr. Zarkov's laboratory.

Ekco were clearly delighted and had him design further sets including the AC 77. As a radio it is of reasonable specification. A seven stage superhet with bandpass input to pentode first detector; triode oscillator; transformer coupling to pentode I.F. amplifier, automatic volume control on two valves from double diode, which also acts as a second

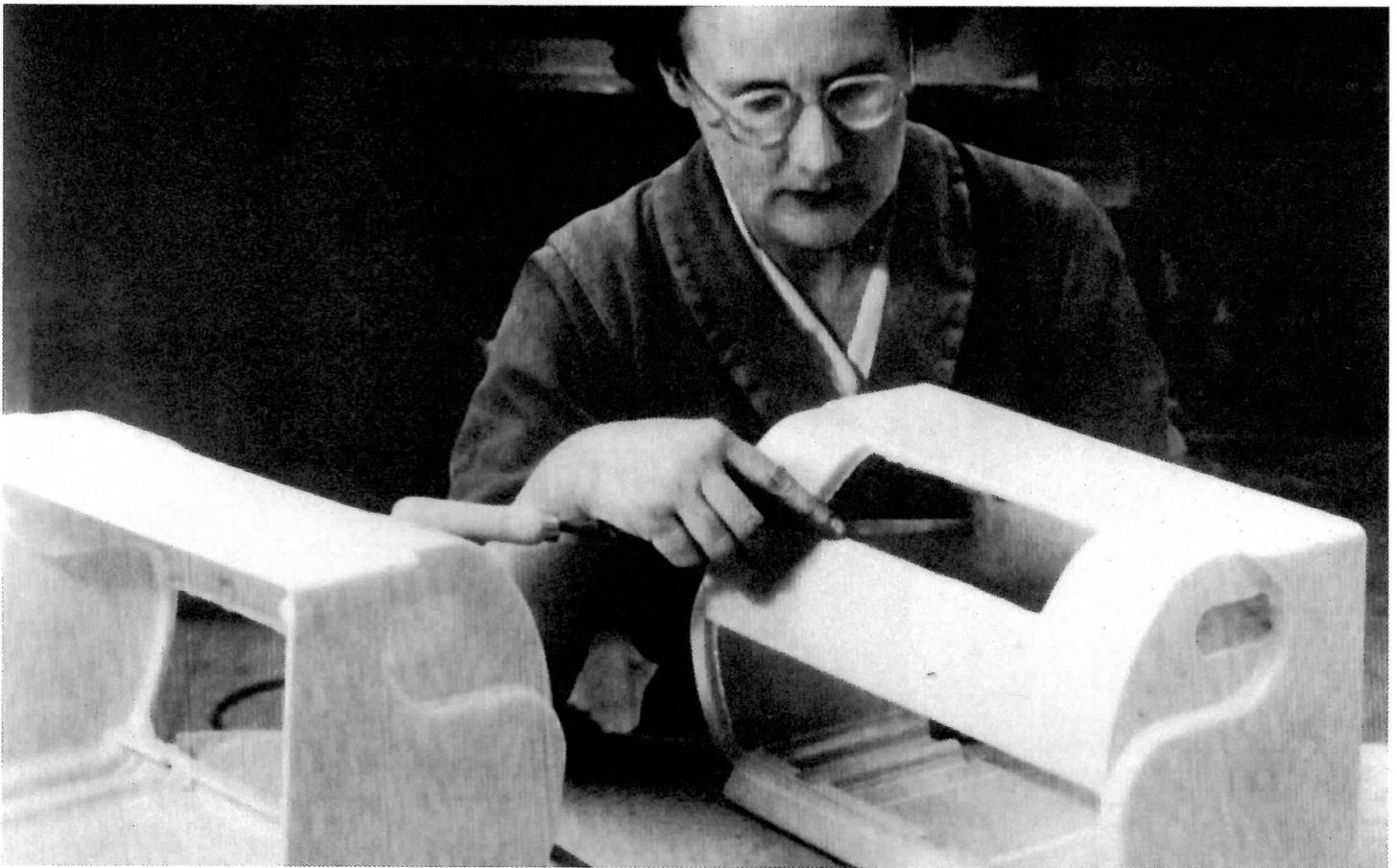


Left: A black and Ivory version of the AC77

Right: A more conventionally coloured AC77



Below: Ivory cabinets being finished at Southend-on-Sea circa 1946



detector, feeding high slope output pentode. It also offered image rejection and a continuously variable tone control - all of which makes breathtaking reading in the 1936 catalogue.

Personally, I don't altogether know what all that amounts to, apart from sounding good to the prospective Ekco agent, who would no doubt regurgitate the more impressive (less understandable) details to a customer who had innocently enquired about the striking looking wireless in the window. Which brings me back to the point of my story.

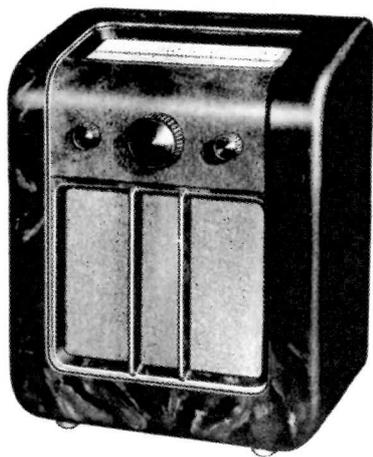
From a design point of view, this set was quite a development, Ekco had for some time referred to their table models as 'consolettes'; in the styling of the AC 77 this is quite literally the case, as it is the traditional format of a

console scaled down to the size of a table model. A key feature was ease of operation. This was achieved by setting the dial at the top of the cabinet and sloping it at an easy viewing angle; after all, few people actually wanted to set their radio up on a shelf, which is the other way of putting a normally positioned dial at eye level: prosaic perhaps, but that is the essence of good design. Not only that, it is good in that the form of the set follows its function. Not simply in a decorative sense but in an ergonomic sense which is a logical progression from the ideas put forth by the early Bauhaus designers - form follows function—an idea that was debated amongst the members of the Modern Architectural Research Society (MARS) whose members

included Chermayeff, Walter Gropius and Wells Coates among others.

So it has a dial at a funny angle but it's still not round. True. What it is, is standardised. The example illustrated is an AC 77 but three other receivers were housed in identical cabinets. Variants to spot are the B67; BV 67, a special vibratory 'no H.T.' battery model; AC 77 (or the AC/DC version the AD 77) and the AW 87 an eight stage 'All Wave' superhet that weighed in at 18 guineas in the Irish Free State. The AC and the AC/DC chassis were also used for the console model in that year, known as the CT77 and CTU 77 respectively.

Employing one cabinet for several different receivers was an idea which fitted in perfectly with the notion of 'All Electric' receivers that



Magnificent superlative of sterling performance and a higher standard of reliability than ever before. Really comprehensive specifications - full A.V.C., panoramic 'Edison' scales with station names and wave-lengths, variable tone control - a host of other features of outstanding merit. Thirteen charts and two radios sensitivity - an all round triumph from Britain's leading radio factory.

AC77 Walnut Finish **10** GNS. AD77 Walnut Finish **10½** GNS. Black and Ivory prices 7/6 extra.

# EKCO

Radio



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Black and Ivory 10/6 extra

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Ekco propagated as a major feature of their products, so this is an excellent example of the Ekco wireless philosophy- all electric, architect designed, with cabinets moulded in the new substance, plastic. Both examples are available for each type of chassis. In my experience, most people enjoy at least the appearance of choice and this idea did give people the chance to own this particular set whatever their electrical or listening needs.

The cabinet itself is made in two pieces, allowing the cabinets to be produced using smaller presses if necessary. Reducing the

size of the individual pieces aimed to lower the failure rates in moulding and gave the added bonus that if one part failed a whole cabinet was not lost. However, the real beauty of this system was that it allowed the cabinets to be produced more effectively using urea formaldehyde, which lends itself better to smaller, comparatively thicker mouldings, thus providing greater variety in cabinet colour permutations.

Now I have arrived at the real crux of the matter. Most collectors are only too well aware of coloured round Ekcos and their substantial

current value (although the seventeen and a half thousand pound example is the subject of some dispute as to whether it actually sold or not: disappearing bidders have been mentioned). Most do not appear to be impressed at the thought of owning one until huge or minuscule prices get bandied about.

Although the AC77 is neither green nor round, it is an interesting example of a pre-war coloured Ekco moulding. It was produced in Britain for the Belgian market and, as usual, was available in a standard brown or, for a little more money, in black and ivory. The cabinet,



knowledgeable collector from recognising that it is a wireless that has possibly failed to survive, unlike some coloured pre-war sets.

Why do I believe that this set could be unobtainable? After all it's only a set of the DAC 90 era and they are always turning up in ivory cabinets.

The U76, aka The Consort, was generally available in three bakelite cabinets: walnut, jade green and black; all of which had an ivory speaker grill and flywheel tuning. I don't know who designed it, I suspect it was one of the design department at Ekco rather than a commission given to a well known architect or designer like Wells Coates or Mischa Black. If anybody knows I would be extremely interested to hear.

Anyway, all these different colours turn up at venues from car boot fairs to auction houses with reasonable frequency. However, no ivory cabinets have managed to pop up as far as I am aware.

Obviously, my not having seen one in the plastic is not enough proof, I must have stronger grounds than that.

It is generally accepted that the A22 (that's the post war round dial round Ekco) was only produced in a coloured cabinet as a one off. However, the Bakelite presses at Southend, boasted by Ekco to be the largest in Britain, produced two cabinets per activation. So it is reasonable to assume that if one was going to produce a limited run of cabinets, groups of two would be a logical choice and voila! there are two cabinets in the picture.

If you have read 'Bakelite Radios' by Robert Hawes and Gad Sassower you will be aware of the photograph of a row of women all filing off the moulding flashes from the AD 65 cabinets. Ekco, like most factories, liked to try to improve

efficiency by putting a number of people all in one area working as quickly as possible mainly because one or two people would find it difficult to finish 150,000 cabinets within one year. The solitary lady finishing those cabinets is displaying a certain care that is not normally associated with a person who is being timed on their performance, as workers at Ekco often were. It would be unusual for that to happen in a publicity photo I accept, but she still could not have filed off several thousand cabinets even if she had the abilities of a much celebrated Russian coalminer.

Another suggestion has been made to me concerning this cabinet. That is that it may have been produced for the export market. Again, I think the circumstances suggest a limited run rather than anything even approaching economic feasibility, which pretty much rules out even the most heavily subsidised export programme.

The most likely reason for the production of this cabinet would have been display at events such as the British Industries Fair, which was the purpose of the Ekco stand pictured in the photograph on page 4, or at prestigious Ekco agents, such as Harrods.

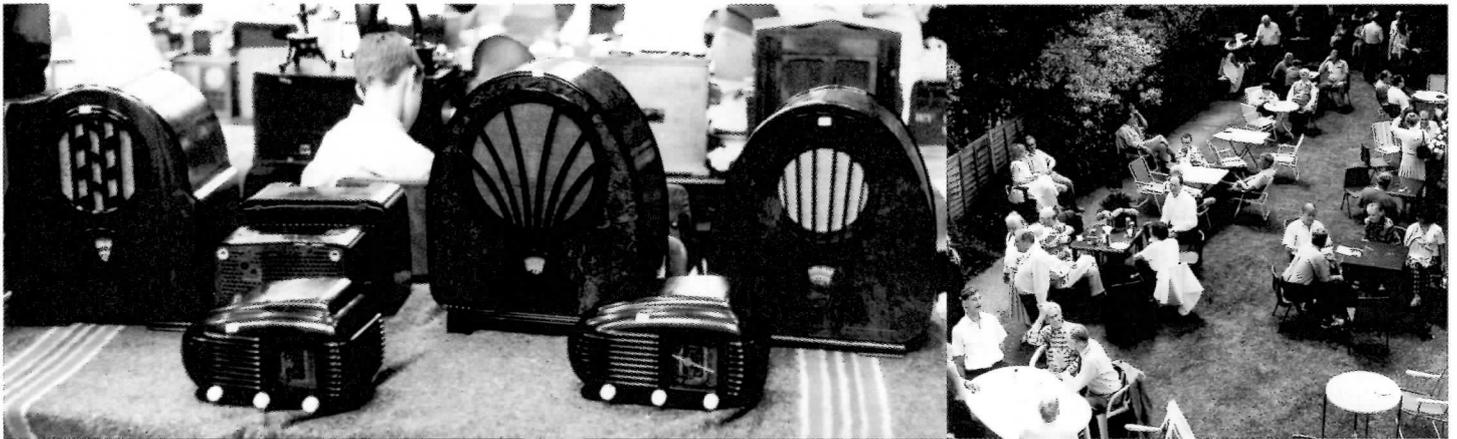
The sets in this photograph are all pre-war and judging from the date span of those present, the shot was most likely taken in 1937/38. The exhibits are arranged symmetrically rather than chronologically and it may be interesting to some to note that there are two AVO meter panels in the central display. Of more interest to me are the tables and chairs which are in moulded plastic with what look like the tubular chrome stands produced for the earlier AC 74 cut up and welded together to make table legs! (these tables occasionally turn up at Art-Deco fairs- Editor) I hope that

this is not the case and that they were simply produced using the same technique and design aesthetic as the stands.

A number of the cabinets are presumably in exotic colours chosen to lure the industry into a deal with Ekco, although a number of them appear to be standard brown or black and chrome/ black and ivory versions. Of interest are the AC85 and matching AC86 on the opposite side, presumably both in ivory and the two round sets which I hope are not in grey as I feel that that would be an enormous disappointment. As I have been talking about an AC 77, I think the one shown here is of particular note. This example appears to have an ivory surround (it could be light blue for all I know!) and a black insert (that could be dark blue for all I know). I understand from the photograph in The Setmakers (P. 129) that an all-ivory version was displayed in Belgium - whether it went into commercial production or not I don't know at present but there are definitely two of them in the picture. I have heard a lovely rumour that an ivory cabinet is lurking somewhere on the continent: beware fakes, they are not impossible. Of course, the set in the British Industries picture could have been part of an ivory cabinet made into another variation for display purposes, I hope that a BVWS member has either seen one or perhaps even knows of its whereabouts.

Remember, there are five coloured round sets, four definite and one heard of but unseen. Three are green and two are ivory. the AD 65 service sheet reproduced in the Spring '97 Bulletin shows that it was commercially available in made-to-order coloured cabinets.

The question now to ask is: how many ivory or ivory and black Belgian sets have survived?



Top right: a view of Gerald Wells' garden party, traditionally held the day before the first Harpenden swapmeet of the Summer. A fine day was had by all despite a hoax telephone call saying that Gerald's garden was a fire risk. The weather was sunny enough for the editor to get his arms sunburnt. Gerald's party attracted over a hundred guests, which shows the popularity of Gerry and that of his Summer event.

Top and bottom left: the swapmeet at Harpenden on Sunday 8th June, the first Harpenden for new organiser Ian Gurton in conjunction with Pam Zimmer. It was a busy affair with some very interesting pieces of apparatus changing hands during the swapmeet. An ideal way to pass the hours.

# A Pilgrimage to Prittlewell Priory - Southend

by Nicholas Odell

Mention Southend, and people's imaginations conjure images of the mile-long Victorian Pier, sun, sand and, maybe, memories of Mods and Rockers vying for supremacy. However, to the writer, Southend means E. K. Cole Ltd. (EKCO)—one of the all-time great radio manufacturers who were responsible for bringing radio receivers with modern exciting designs and superb performance to the listener. All this has been captured at Prittlewell Priory Museum.

Approaching Southend on the A127 arterial road, you notice huge pylons criss-crossing the skyline, like nerves, supplying homes many of which were clearly built during the great urban sprawl in the 20's and 30's, exhibiting their stylish geometric Art Deco designs - providing perfect settings for Ekco's stunning 'new' radios. The essence of that exciting modern age is still seen and felt, as this Essex town is approached.

The museum is situated deep within Priory Park: beautifully maintained grounds surround it, encapsulating it from the colourful seaside atmosphere. Having parked the car, we spotted a gathering of locals near the bowls club, and asked directions to the radio museum. The friendly elderly ladies pointed the way, whilst enthusing about a Ferguson Radiogram "in the loft; the tone is so much better than anything you can get these days." I couldn't wholeheartedly agree, being a modern hi-fi fan, but it would have seemed churlish to have argued the point vigorously, in the face of such enthusiasm and helpfulness.

The ancient Priory nestles amongst magnificent bay trees. Could there really be such modern inventions within? But yes - entering the medieval hall gave access to the Radio Collection, as well as other exhibits including Pianolas, and a National History Gallery with a Brass-rubbing area. Various parts of the Priory date from the twelfth through to the fourteenth century.

The Radio Collection fills two rooms containing radios, gramophones and televisions, with particular reference to the local firm - E. K. Cole Ltd. of Prittlewell. Most of the pre-war bakelite Ekco receivers are here in their 'as found' condition, superbly displayed alongside a Princess portable P63, in stunning shades of green. Also there is much ephemera, sales leaflets, signs and 'photos of the factory including ones of the giant AEG bakelite presses. All exhibits are well explained, and much information given about the factory's history and Eric Cole himself.

The collection was formed by the amalgamation of a private collection built up by a local man (and BVWS member), Bill Caten, along with donations and purchases made by the museum. There is also a reserve collection of technical information and ephemera in closed storage, although bona fide requests for technical advice and service information are 'sympathetically handled.'

As we left, we learned about a new exhibition of 'Prehistoric technology' to be featured at the Priory. We would therefore urge all latter-day pilgrims to the Radio Collection to check that the precious Ekcos are not misplaced amongst the ancient exhibits!



Right: Prittlewell Priory  
Remaining pictures: Some of the delights to be sampled in the vintage wireless section of the museum





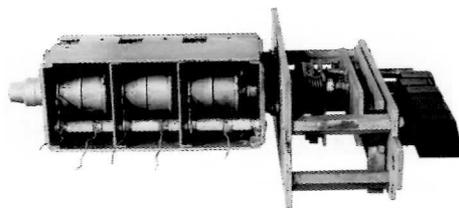
## A 1920's Radio Evening Class

Ralph Stranger was well known from the late twenties to the fifties as the author of several popular works on radio, such as *Wireless*, *The Modern Magic Carpet*, *The Outline of Wireless*, *The Mathematics of Wireless*, *The Outline of Television*, etc. What is less well known is that he wrote under a pseudonym and that his real name was Ralph Judson. A former B.B.C. employee (he retired in 1955), he also lectured on wireless and at one time conducted evening classes on the subject, under the auspices of the then London County Council. The photograph is identified on the back as his L.C.C. evening class at Camden Town, with a selection of equipment that would appear to date from around 1924/5. Ralph Judson, alias Stranger, is assumed to be the figure seated centre front in the wooden armchair, but positive identification by anyone who knew him, would be welcomed. The source of the photo is a small album of wireless postcards and photographs presented to him on retirement, with a bound radio magazine bearing his name, found by me in a Brighton antique shop around 1980. The rigid electrocuted appearance of many in the photo was more probably caused, one hopes, by the length of exposure needed then.

Ian Higginbottom

# Condensed Classic

by John Holmes, Western Australia



I have read with great interest and pleasure Mr Dixon-Nuttall's article on the Philips concentric tuning condensers. I used to come across them in my earlier days as a radio mechanic, and liked them very much. His article concerned Mitcham-built sets but what about those of Eindhoven build like models 291A and 316X, with the concentric condensers, 1938 and 1939 top of the range receivers with splendid bandspread performance for the reception (and enjoyment) of short wave broadcast stations?

I was, as I have said, a radio mechanic and in the period 1948-55 I worked in East Africa with the Philips agents there. Since that market was not served by Mitcham we had Eindhoven-built sets, and boy! were they different! Model 316X had a really workable band spread mechanism attached to the direct action tuning. It was not an easy set to master and changing from normal tuning to one of the five bandspread channels was like

using a rather difficult gearbox on a car not fitted with synchro-mesh gearchange. If you didn't get it right, you got it very wrong. But it worked marvellously well. Bandspread on this model was achieved by a variable inductance. The average tuneable width on a typical radio dial without bandspread of the short wave band was usually no more than one inch or perhaps a little more at the longer wavelength end of the dial. With the 316X it was some four and one half inches long for each bandspread circuit! Incidentally, we knew these tuning condensers as 'slide condensers'. They performed trouble free despite the tropical conditions we had practically on the equator at coast level.

Just a few months ago I had the good fortune to have a 316X in for repair. It had come to Australia via Mauritius, where it was sold way back in 1940. It still had the original valves in it, and the EM4 tuning indicator apart, they did not require replacement. I

would have loved to buy it but I was told it was a family heirloom. I would not have minded being an heirloom with it!

That quality of build was never again matched. Going back to the previous year of 1938 there was the supreme Philips Model 291A also sporting a three gang concentric tuning condenser. For the oscillator circuit in bandspread mode a separate slide condenser was employed. This set had no competition from any other maker of domestic sets for short wave reception. There were some Pye sets about, and Ferguson and a few Marconi models with short wave tuning; and for those who wanted something better from the U.K, Eddystone, or other communication type sets were the thing, but they did not please the music lovers. Records were better. In those days we had only the 'wireless' to turn to for the latest news and quality programmes, and good performance on the short wave bands was vital. Our daily news at home came from the BBC, or All-India Radio, Radio Egypt, Voice of America, and many others,

Without doubt Philips sets with concentric tuning condensers were the best. Not even the Yanks could compete with them. Makers such as Zenith, Philco, R.C.A., Midwest, and a few others had been on the market with little but an advantage in price to recommend them.

They'll never make sets like those Philips again. Transistors? I've...well, well, well,...



Top Pic: A view of some of the goodies on offer at 'Waves' a radio shop in New York, USA. The stock runs the whole spectrum of Wireless collectibles ranging from 20's and pre-broadcast equipment through to tombstone sets, catalins, 50's, 60's sets right up to the 1970's. The shop also sells gramophones, microphones, promotional material and ephemera. 'Waves' is run by the husband and wife team of Bruce and Charlotte Mager who have been involved in the wireless collecting scene for a long time.

Anybody with even the most minuscule interest in wireless who happens to find themselves in Manhattan should spend a little time there. It is fascinating. Both Bruce and Charlotte are very helpful and are very willing to answer any queries you may have concerning their stock.

'Waves' is located at 110 West 25th Street, Manhattan, New York in suite 1005 (tenth floor) and is open Mondays through to Fridays from 12noon to 6 pm. On Saturdays and Sundays the shop is open from 10am to 6pm. Telephone: 212 989 9284, Fax: 201 461 7121. e-mail: c1wave@aol.com, the website is: www.wavesradio.com

Pic on right: An unusual view of Broadcasting House, taken on May 11th 1941 over the wreckage of the recently bombed Queen's Hall.



## BBC Experience

The BBC is drawing on 75 years of history and broadcasting tradition to launch a unique visitor centre called 'BBC Experience'.

It will be officially opened by Her Majesty The Queen on October 29, as part of the Corporation's anniversary celebrations. BBC Experience offers a look at the Corporation- its past, present and future, from the inside.

Housed in one of London's most famous landmark buildings—Broadcasting House in the West End—the permanent exhibition opens to the public on October 30 and expects to attract 200,000 visitors a year.

Of particular interest to BVWS members is the Marconi Collection. This is the first time the Marconi Collection has been on public view and has been generously lent to the BBC by GEC-Marconi. Among the rare artifacts will be Marconi's earliest radio equipment, diaries, telegrams from The Titanic, a selection of historic photographs and the microphone used by Dame Nellie Melba for a song recital in June 1920, Britain's first advertised public broadcast programme.

There will be an 'Interactive Radio Studio' where visitors will have their first opportunity to try their hand at broadcasting activities. Budding actors and technicians can make a three minute radio play in a specially designed studio and hear the results of their

creativity played back.

The 'BBC Experience' will also feature 'A day in the life of Broadcasting House', 'The Television Experience' and a shop and cafe.

Birthday celebrations for the BBC's 75th anniversary include special radio and television programmes, a series of concerts, a special edition of the Radio Times and a gift to the nation's youngsters, a CD-ROM detailing the BBC's history, which is being given free to schools.

The 'BBC Experience' will be open seven days a week, from 9.30am - 5.30pm. The bookings line is now open- 0870 6030304 and tickets cost £5.75 for adults and £4 for children.

## Bampton Museum 1991-1996

Bampton Museum in Devon has now closed, but it is hoped that a new site will be found in the near future elsewhere in the West Country.

## Baird on Radio 2

As a part of the BBC's 75th Anniversary celebrations, Joan Bakewell will present a programme with the title 'Seeing by Wireless',

a tribute to John Logie Baird. It will be broadcast on Tuesday, 21st October on Radio 2 from 9.30 to 10.30 PM.

## Oops!

The article regarding the Tunbridge Wells Swapmeet in Bulletin 97/2, page 31 should have mentioned that it was at the Camden Centre and not the Angel Centre.

## Articles stolen in Germany

Mr W. Brox of Frankfurt has had a number of transistor radios and books stolen from his apartment. The radios are: Schaub-Lorenz T20, T30 and T50, 2 Russian VF601's and one Saba. The books are English and also German and are engraved or stamped 'WB', 'W. Brox' and 'Oberursel'. There is a reward for the safe return of the above.

Mr Brox can be contacted at: PO Box 110302, 60038 Frankfurt/M, west Germany.

# Alba's Baby

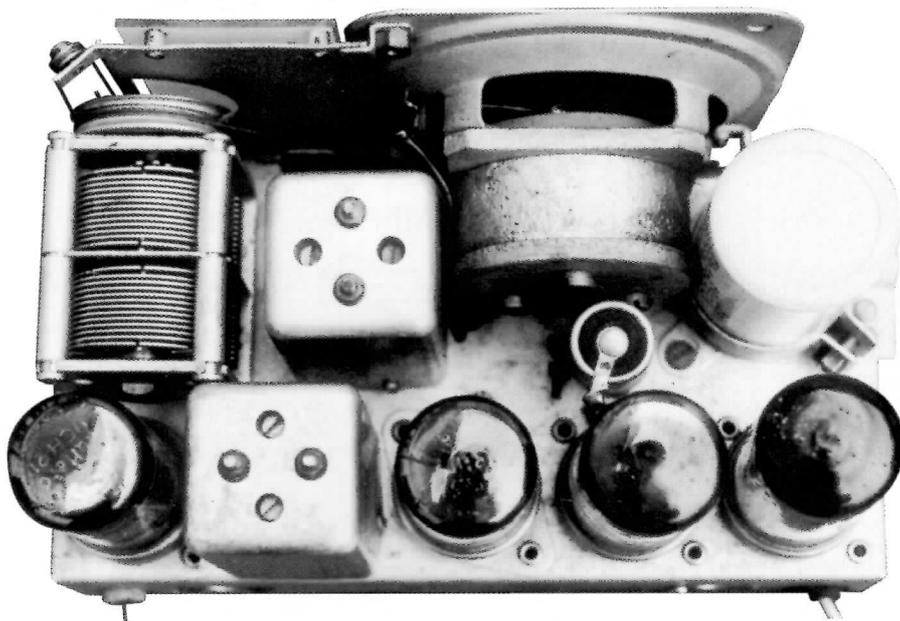
by John Ounsted



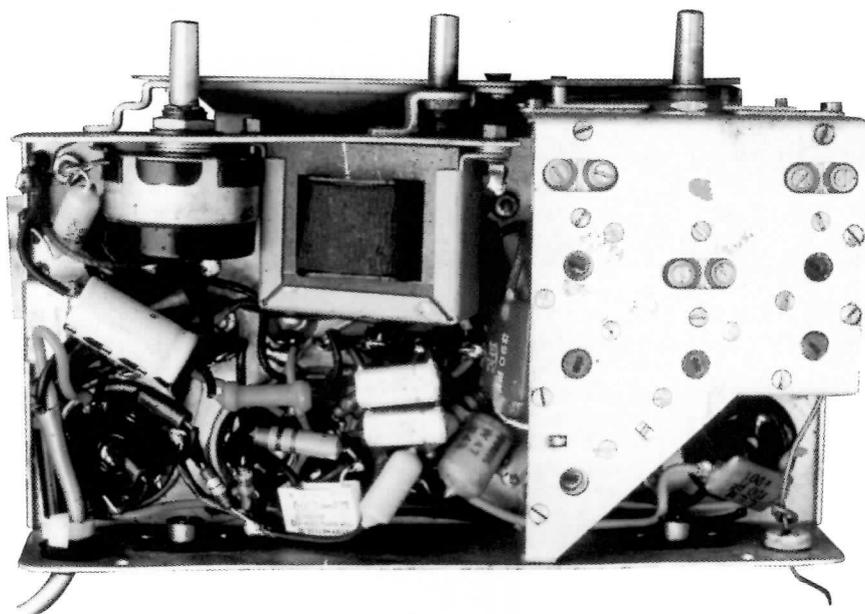
The Winsome Wireless, or Little Big Set-The Alba C112.

**It's the sweetest little thing—a delightful Tom Thumb set. The minute plastic grille and two-inch tuning scale lend it the air of a toy—a sort of Fisher-Price radio, especially perhaps when seen in the Neapolitan ice cream range of colours in which it was enticingly offered. The tiny detailing is wonderfully endearing, again evoking the nursery; even the wee control-knobs have inserts that are colour-keyed to the cabinet. Viewed frontally, they look like flower-heads. This radio is not, of course, quite as small as the Periquito which we looked at a few Bulletins ago, but it is a superhet, with all the advantages that go with that. "What is it?" I hear you clamouring. The answer: an Alba C112, or perhaps its younger brother the C114— even the Wireless and Electrical Trader sheet, not normally given to gushing, described the first of these two as "a true midget mains receiver of very small dimensions". Right on.**

**T**he layout and relative proportioning of speaker, controls and scale is in itself conventional, and would not attract any special attention on a normal-sized table model. The Alba is probably best considered as a full-sized radio that suffered a sort of freakish wrong-end-of-the-telescope Sci-fi miniaturisation. One minute it was a big set, sitting peacefully on the sideboard, tuned to the Home Service, minding its own business, then Kachow-Pow!, it got zapped by an incredible shrinking ray by Ming the Merciless of Mongo. This generated a multi-coloured army of mutants, each about one third the size of the original radio, but still blessed with all its features (and its full-sized components). The later C114 retained the case but updated the innards; to simplify things, we'll mostly consider the earlier model.



A tight squeeze.



The receiver after modification.

### First Impressions.

The C112 is not without further surprises; for a start, it's actually a full all-wave set, with a 16-50m SW Band, the designers having squeezed the necessary coil packs on to a densely-packed detachable sub-chassis, presumably to allow this to be fabricated and tested separately. The valve line-up is unexpected too, being merely two UCH21 triode-hexodes, a UBL21 double-diode pentode, and a UY21 rectifier. The first valve is a conventional frequency-changer, but the second has its hexode strapped as a pentode IF amp, with the triode used as first AF amp. The UBL21 is a standard output valve and signal and AVC rectifier. This gives a total of four gain stages. Hence, disregarding the low HT voltage which limits the available output power, the set bids fair to emulate standard full-size five-valve sets, even before trying to

cram five distinctly non-miniature bottles on to a chassis only about the size of a postcard. In fact, as we'll see later, the set seems to have almost too much gain. (It is, of course, not the only receiver to use the Mullard Continental "21" valves in this way- several larger contemporary Philips and Mullard chassis used this twin triode-hexodes and D-D-Pentode lineup, including that weird-looking Philips bakelite set, seen in two recent Bulletins, where the tuning scale sits on top of the case, without any obvious means of support, like the windscreen on a convertible. The exotic-looking "Alien" Tesla Talisman has innards that are very Philips-like; it, too used this lineup, but with a different choice of rectifier).

In these larger receivers, which had far less need to save space than the Alba, choosing these valves may have been a case of necessity being the mother of invention,

certainly for AC/DC sets; my researches have been unable to turn up any such valve as a UBC21, (although a UL21 did exist, according to AVO valve data, and an EBC21 was at least listed for AC sets), so perhaps setmakers had to think laterally, and design using the valves they were given. But back to the Albas; having outlined the circuit, let's now look at the hardware.

### Inside the Set-a Tight Squeeze.

The first surprise for the unwary contemplating dismantling is that the back cover isn't just a back cover-it's also fixed to the chassis and helps hold it in place. Again, as in the Periquito, there are no normal case-to-chassis fixing screws, but the Alba's rather more substantial works do demand some means of anchorage. This is accomplished, surprisingly well, by screwing the chassis firmly to the cardboard back, which, having only a small area, is fairly rigid. The back itself is then attached to the rear of the cabinet in the usual way. This is all well and good, provided that the back isn't suffering from heat stroke, and in danger of disintegration....(see later) or maybe even completely absent.. On some models, an outer collar around the spindle of the tuning control is designed as a snug fit in the appropriate hole in the case, and this engagement gives additional rigidity, as do two chassis-mounted copper strips, which are sprung against two ledges inside the case, but which have an unfortunate tendency to snap off.

Anyhow, these simple fixing techniques certainly allow rapid dismantling; after removing the knobs and the four back screws, the chassis slides out, with the back still attached. This is then removed from the chassis. Your first (astonished) impression is of mostly standard-sized components jostling for position like battery hens on a tiny floor space. Of course, this cramming is to be expected in any midget set, but the Alba really takes things to the limit, especially below decks. Had any major component been supplied even slightly out of tolerance there would have been turmoil at Tabernacle Street, where presumably needle files were standard issue in the production toolkit.

On contemplating the fit of the works in the case, for instance, we see the taller valves are only a whisker away from bumping their heads on the "ceiling", and these big, portly "21" series bottles seem even more incongruous than the Periquito's when shoe-horned into a tiny case like this. Speaking of valves, some versions of the UY21 rectifier look curiously like projector bulbs; their elegantly domed tops, with shiny black gettering, give them the hi-tech Bauhaus look of those recently reintroduced hi-fi valves, like the 5881, or those unearthly multikilovolt tubes one used to find lurking in the black "smokestacks" of early colour TV's.

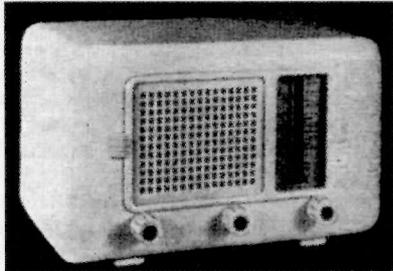
The IF transformers are a trifle old-fashioned; by 1947, many manufacturers were going over to adjustable dust-iron cores, shunted by fixed capacitors of typically 100pF or so, but the Alba adheres to the pre-war practice of using variable trimmers shunting fixed inductors. The two trimmers in anode circuits are at least isolated from HT, (unlike in some pre-war sets, where adjustment is fraught with peril) but the coil cans are not particularly small by the standards of, say, the Marconi P20B, and they hog valuable space on deck. Space is also at a premium below deck, however, and C11, the output pentode cathode decoupler, has to be mounted above

"TRADER" SERVICE SHEET

840

ALBA C112

3-BAND A.C./D.C. MAINS MIDGET



**A** TRUE midget mains receiver of very small dimensions, the Alba C112 is a three-valve (plus rectifier) three-band superhet designed for direct application to A.C. or D.C. mains of any voltage between 200V and 240V without adjustment. The valve range used is the new Mullard Continental "21" series, with local bases. Release date and original price: November, 1947, £13 13s plus purchase tax.

CIRCUIT DESCRIPTION

Input from attached aerial, via isolating capacitor C1 and coupling coils L1 (S.W.), L2 (M.W.) and L3 (L.W.), to single tuned circuits L4, C24 (S.W.), L5, C24 (M.W.) and L6, C24 (L.W.), which precede a triode heptode valve (V1, Mullard UCH21) operating as frequency changer with injector grid coupling. Oscillator grid coils L7 (S.W.), L8 (M.W.) and L9 (L.W.) are tuned by C25. Parallel trimming by C26 (M.W.) and C27 (L.W.); series tracking by C4 (S.W.), C5 (M.W.) and C6 (L.W.). Reaction coupling by anode coils L10 (S.W.), L11 (M.W.) and L12 (L.W.). Second valve (V2, Mullard UCH21) is another triode heptode, in which the heptode section

operates as intermediate frequency amplifier with tuned-primary, tuned-secondary transformer couplings C28, L13, L14, C29 and C30, L15, L16, C31.

Diode second detector is part of double diode pentode output valve (V3, Mullard UBL21). Audio frequency component in rectified output is developed across load resistor R5 and passed via A.F. coupling capacitor C10 and manual volume control R4 back to control grid of V2 triode section, which operates as A.F. amplifier. I.F. filtering in diode circuit by C12, R6, C13.

Second diode of V3, fed from L16 via C15, provides D.C. potential, which is developed across load resistor R12 and fed back through a de-coupling circuit as G.B. to F.C. (except on S.W.) and I.F. valves, giving automatic volume control.

Resistance-capacitance coupling by R8, C14 and R9, via grid stopper R10, between V2 triode and pentode section of V3. Fixed tone correction in V3 anode circuit by C16. G.B.

for V3 pentode and A.V.C. delay voltage are obtained from the drop across R11 in the cathode lead to chassis.

When the receiver is operated from A.C. mains, H.T. current is supplied by I.H.C. half-wave rectifying valve (V4, Mullard UV21) which, with D.C. mains, behaves as a low resistance. Smoothing by resistors R13, R14 and electrolytic capacitors C17, C18 and C19. Valve heaters, together with line cord ballast resistor R15, are connected in series across mains input.

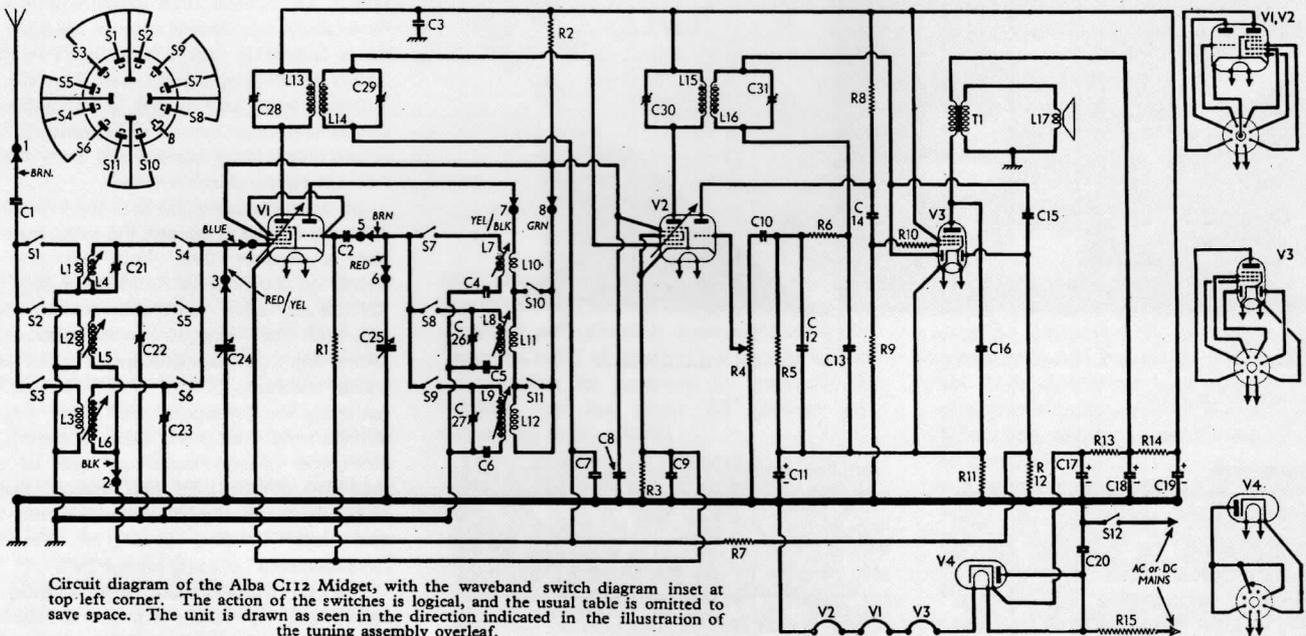
COMPONENTS AND VALUES

RESISTORS		Values (ohms)	Location
R1	V1 osc. C.G.	47,000	J6
R2	H.T. feed resistor	10,000	F6
R3	V1, V2 fixed G.B.	150	G6
R4	Volume control	1,000,000	F4
R5	Signal diode load	470,000	B2
R6	I.F. stopper	47,000	B2
R7	A.V.C. decoupling	2,000,000	G6
R8	V2 triode load	47,000	G6
R9	V3 pent. C.G.	560,000	F6
R10	V3 C.G. stopper	47,000	F6
R11	V3 G.B., A.V.C. delay	150	F6
R12	A.V.C. diode load	1,000,000	G6
R13	H.T. smoothing resistor	270	E6
R14	sistors	1,000	E5
R15	Heater ballast	680	E6

CAPACITORS		Values (μF)	Location
C1	Aerial isolator	0-00025	K9
C2	V1 osc. C.G.	0-0001	J7
C3	H.T. R.F. by-pass	0-1	H5
C4	Osc. S.W. tracker	0-0039	N9
C5	Osc. M.W. tracker	0-00039	N9
C6	Osc. L.W. tracker	0-00014	M10
C7	A.V.C. decoupling	0-1	G6
C8	H.T. feed decoupling	0-1	F6
C9	V1, V2 cath. by-pass	0-25	H6
C10	A.F. coupling	0-005	E5
C11	V3 cath. by-pass	50-0	C2
C12	I.F. by-pass	0-0001	B2
C13	I.F. by-pass	0-0001	B2
C14	A.F. coupling	0-005	G6
C15	A.V.C. coupling	0-0001	G7
C16	Tone corrector	0-01	F7
C17	H.T. smoothing capacitor	8-0	D2
C18	capacitors	16-0	D2
C19	capacitors	16-0	D2
C20	R.F. by-pass	0-01	E6
C21	Aerial S.W. trim	0-00001	L9
C22	Aerial M.W. trim	0-00001	N8
C23	Aerial L.W. trim	0-00003	K8
C24	Aerial tuning	0-00037	A1
C25	Osc. tuning	0-00037	A2
C26	Osc. M.W. trim	0-00001	N8
C27	Osc. L.W. trim	0-00003	K8
C28	1st I.F. transformer	0-0002	B3
C29	tuning	0-0002	B3
C30	2nd I.F. transformer	0-0002	B2
C31	tuning	0-0002	B2

† Line cord.

\* Electrolytic. † Variable. ‡ Pre-set.



Circuit diagram of the Alba C112 Midget, with the waveband switch diagram inset at top left corner. The action of the switches is logical, and the usual table is omitted to save space. The unit is drawn as seen in the direction indicated in the illustration of the tuning assembly overleaf.

chassis, its vertical edge narrowly missing the speaker magnet. This last also very nearly fouls the triple main electrolytic, fixed in a chassis-mounted clip close by.

The dial-cord arrangement is very complicated on the C112, especially given the size of the set; crazily, there are actually two separate cord loops, one linking the tuning knob to the

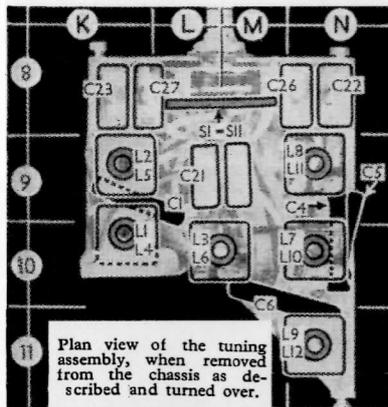
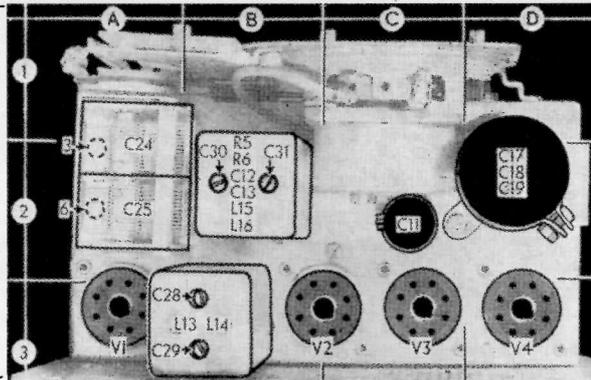
little gang-drum, the other coupling this drum to the cursor. The cord itself therefore has to be very thin since the drum has to accommodate no less than four adjacent windings on one side. The cord used on the cursor's loop has to be thinner than on the other loop, otherwise you get binding and tangling on the drum. This cat's cradle was happily rethought

on the C114, being replaced by a far more sensible single cord design.

The tuning scale is plastic, not glass, and has a tendency to slight yellowing with age, but this is usually not too bad. Originally, it was apparently a buff colour rather than true white anyway. The makers did not bother to colour-coordinate it to the cabinet, so it can

OTHER COMPONENTS		Approx. Values (ohms)	Location
L1	Aerial coupling coils ...	0.1	K10
L2		1.7	K9
L3		65.0	L10
L4		Very low	K10
L5	Aerial tuning coils ...	4.5	K9
L6		23.0	L10
L7		Very low	N10
L8	Oscillator tuning coils ...	5.6	N9
L9		13.0	N11
L10		0.2	N10
L11	Oscillator reaction coils ...	3.0	N9
L12		6.0	N11
L13	1st I.F. trans. { Pri. Sec. }	6.5	B3
L14		6.5	B3
L15	2nd I.F. trans. { Pri. Sec. }	6.5	B2
L16		6.5	B2
L17	Speech coil	2.7	C1
T1	Output trans. { Pri. Sec. }	140.0	G5
S1-S11	W/band switches ...	0.4	G5
S12	Mains switch, ganged R4 ...	—	L8
			F5

Plan view of the chassis. Two leads pass through the chassis deck to the gang from the tuning assembly below.



Plan view of the tuning assembly, when removed from the chassis as described and turned over.

**DISMANTLING THE SET**

- Removing Chassis.**—Remove three control knobs (recessed grub screws); remove the four cheese-head screws securing the top and bottom corners of the back cover to the rear of the cabinet, and slide out the chassis, speaker and back cover as a single unit.
- Removing Tuning Assembly.**—Remove two cheese-head screws at the extreme left and right corners of the chassis pressing, beneath

the tuning scale, and a single cheese-head screw from the chassis deck, close to the gang; remove the receiver back cover (two cheese-head screws) and the single countersunk head screw from the rear edge of the chassis; unsolder the eight leads from the tuning assembly at points indicated in our chassis pictures by the numbers one to eight, and lift out the assembly. When replacing, the eight leads should be re-connected to the numbered points indicated in our chassis illustrations, as follows: brown from C1, to 1; black to 2; red/yellow to 3; blue to 4; brown from S7-S9, to 5; red to 6; yellow/black to 7; green to 8. Connections 3 and 6 are on the gang, the leads passing through holes in the chassis deck.

**CIRCUIT ALIGNMENT**

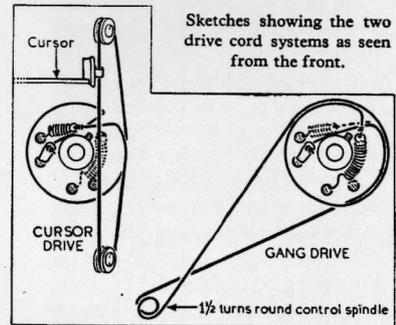
**I.F. Stages.**—Switch set to M.W., turn volume control to maximum and gang to minimum capacitance. Connect signal generator, via an isolating capacitor in each lead, to control grid (pin 6) of V1 and chassis, and feed in a 455 kc/s (659.3 m) signal. Adjust C28, C29, C30 and C31 (chassis locations B3 and B2) for maximum output.

**R.F. and Oscillator Stages.**—With the gang at maximum the pointer should coincide with the 550 m calibration mark on the scale. Transfer "live" signal generator lead to receiver end of attached aerial, via a suitable dummy aerial.

**M.W.**—With set still switched to M.W., tune to 215 m on scale, feed in a 215 m (1,396 kc/s) signal, and adjust C26 (I4) and C22 (H4) for maximum output. Tune to 500 m on scale, feed in a 500 m (600 kc/s) signal, and adjust the cores of L8 (H5) and L5 (J5) for maximum output. Repeat these adjustments.

**L.W.**—Switch set to L.W., tune to 1,100 m on scale, feed in an 1,100 m (273 kc/s) signal, and adjust C27 (J4) and C23 (J4) for maximum output. Tune to 1,900 m on scale, feed in a 1,900 m (157.8 kc/s) signal, and adjust the cores of L9 (H6) and L6 (I6) for maximum output. Repeat these adjustments.

**S.W.**—Switch set to S.W., tune to 50 m on scale, feed in a 50 m (6.0 Mc/s) signal, and adjust the cores of L7 (H6) and L4 (J6) for maximum output. Tune to 16 m on scale, feed in a 16 m (19.75 Mc/s) signal, and adjust C21 (J5) for maximum output. Repeat these adjustments.



**DRIVE CORD REPLACEMENT**

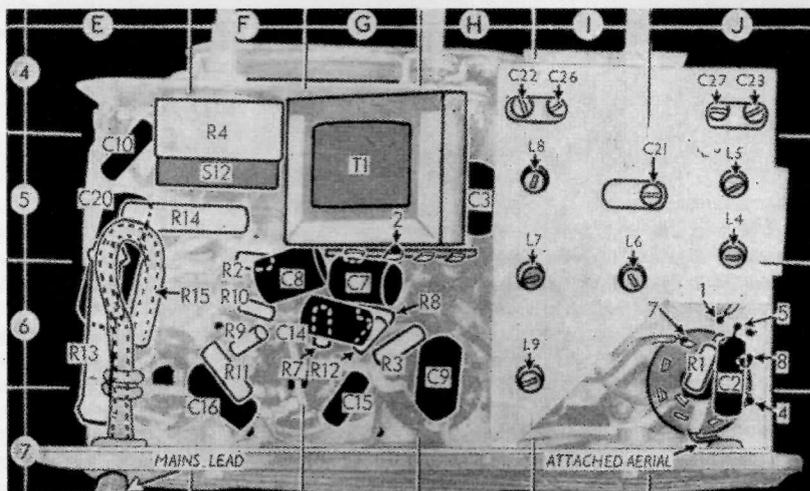
The gang drive cord is of normal thickness and should be fitted first as it goes behind the cursor drive cord, which is of thinner twine. The former is a little longer than the latter, but 18 inches is sufficient for either of them, including some spare for knotting. Each has its own tension spring, but the fixed ends are tied to a common hooked plate. The course of each is shown separately in the sketch above, where they are viewed from the front with the gang at maximum, the drum in each case being common to both. Access is obtained to the drum by removing the scale (four countersunk-head 8BA screws).

**VALVE ANALYSIS**

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on A.C. mains of 230 V. Voltages were measured on the 400 V scale of a model 7 universal Avometer, chassis being the negative connection.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 UCH21	85	1.15	40	2.1
	Oscillator	40		
	40	1.1		
V2 UCH21	85	1.2	40	1.5
	Triode	40		
V3 UBL21	92	25.0	85	5.0
V4 UY21†	—	—	—	—

† Cathode to chassis, 105 v, D.C.



Under-chassis view. Six of the eight connections from the tuning assembly are seen here.

Printed in England by The Cornwall Press Ltd., Paris Garden, London, S.E.1.

clash a little with some cabinet colours (like pink) anyway.

A notable absentee is any kind of dial bulb. There really isn't space for it, or the necessary shunt resistor. This is a pity, since these lights are a valuable safety feature, warning you if the set is live whilst it's being worked on.

The chassis itself (what little we can see of

it) has a flash coating of what appears to be cadmium or chromium plating, which is unfortunately prone to tarnishing and rust. With a bit of patience, it can often be polished up to a near mirror finish though, using Silvo.

On turning the chassis over, we find a teeming undergrowth of components, and again, these are often not particularly small,

and hence have had to be layered to get them all in. As already noted, the front-end coil-formers (and the wavechange switch) are all mounted on a detachable sub-chassis (called the "Tuning Assembly" in the WET Service Sheet). To gain decent access to these components, you have to remove this assembly, which necessitates the unsoldering

of eight wires, some to awkward, inaccessible points. The output transformer (not the smallest you ever saw) also lives under the chassis, hanging from the back of the vertical front face. This component has had to be canted off the horizontal to fit, and even then misses the adjacent standard-size on/off Volume control by a hair's breadth. Two hot-running resistors (R13 and R14) are also alarmingly close to vulnerable capacitors, like C20, and are in danger of melting the mains lead at the point where it enters the chassis. All in all then, Alba could have made their self-imposed task of cramming a big set in a small case rather easier by selecting all miniature components, Marconiphone-style, especially in view of the low HT voltage, with reduced risk from voltage stress or flashovers. Ironically, the only miniature components to be seen are low-wattage resistors of the type that often go "high".

The Alba designers somewhat humiliated the poor C112 by fitting it with a nasty line cord, just like all those imported cheapies that it was supposed to be bettering; but, in Alba's defence, there just wasn't room on that little chassis for a big hot dropper, let alone a respectable heater transformer, and, of course, diode-dropping was not then available. The line cord at least has the advantage of keeping the heat out of the set, by dumping it in the mains lead instead! Clever, what? The HT voltage is sensibly low, at about 105V, roughly halving the anode dissipation of the output valve compared to normal sets, and lessening the searing heat that would otherwise soon scorch the pretty cabinet to a frazzle. Despite these precautions, the back cover can still get charred, DAC 90-style, but this is rather less objectionable than a singed cabinet, especially in attractive, collectible sets like these.

The later C114 is more conventional than its predecessor, employing the standard B8A "U-42" valve range, and taking advantage of the smaller size of these valves to use a more orthodox five valve line up.

It also discarded the line cord and in its stead bravely sported in-set droppers, using the extra space afforded by these miniature valves.

### Mending the sets

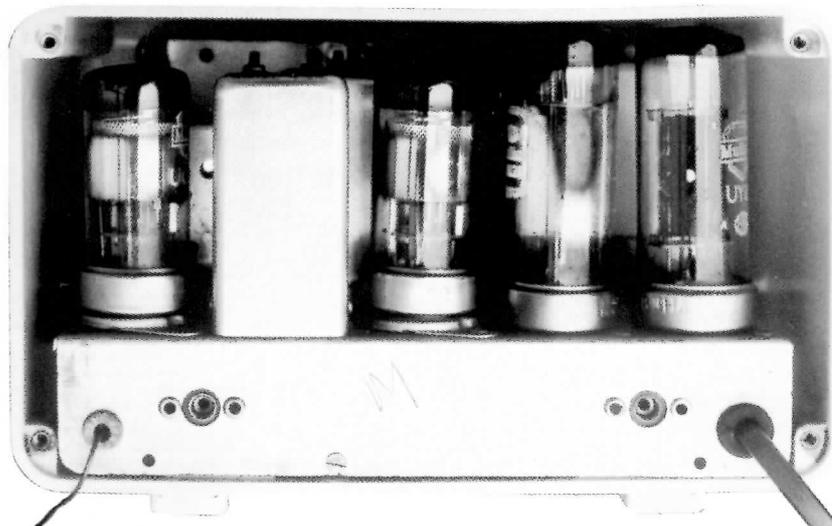
The first and most burning issue to be dealt with then, if the set is original, is the dreaded line cord. Even if this item seems to work, the author would not recommend retaining it, especially if sustained use of the radio is contemplated, and there's a chance it might be left on unattended. To replace the cord, one might first consider a large external resistor, of similar value and wattage to the line cord, perhaps mounted in an earthed, well-ventilated metal box. This simple approach at first seems quite attractive, but the resistor would be dissipating over 40W and its container would be bulky and inelegant, especially when seen in conjunction with the diminutive Alba. An external transformer would seem similarly incongruous; this would at least not get hot, but would have its own additional problems viz, the line cord acted as dropper for both heaters and HT, and hence had a non-sinusoidal current flowing in it. Thus, one cannot simply add up the heaters (which total 145V r.m.s.) and apply this voltage from some handy tapping on the autotransformer or variac direct to the "live" side of C20. If this is done, the heaters will be happy, but the HT will be uncomfortably high, calling for an additional resistor feeding the

anode of the UY21 to get the required 105Vdc at its cathode.

A more attractive alternative, which completely dispenses with unsightly external elements, is to use internal diode dropping to reduce the mains to somewhere near the right heater voltage, and to drop the rest with a simple resistor, whose value and wattage are then just low enough to allow fitting within the cabinet. On the HT side one still needs another resistor in the mains feed to the anode of the UY21 to get the HT down to the right sort of level, but this component also is not too big and hot- the cabinet keeping acceptably cool, even with these two additional resistors being present within it. The receiver can then be fitted with a conventional modern mains lead, and needs no cumbersome external "boxes" in place of the line cord. A circuit is given for these modifications below. No great originality is claimed for them, but note the use of two diodes in series in the heater circuit. Should one of these go s/c, (which does occasionally happen), there will

used for Ra. This is only dissipating 3W, and so can be placed below chassis, but dress other components well away from it. Rb has to go on deck; there's just enough room between V3, V4 and the main electrolytic to place a small tagstrip, secured in place by a small screw through one of the V4's rivet holes. No new holes have to be drilled, hence keeping the chassis original.

A further likely trouble spot on these receivers is the mating between valve pins and holders, even if both of these are scrupulously clean. This is especially likely on the first two valves. Some pin and claw combinations just don't seem to go together, causing cacophonously crackly intermittent connections, IF instability, and the set dying completely after a slow fade, this last being caused by the heater chain being open-circuited. In one of the author's sets the valve holders were first suspected. But, after two new holders-one of the original style, another of a nylon-loaded type-had been tried, the problem persisted. It was then observed that a



Mind your head! The Alba's skimpy skyheight.

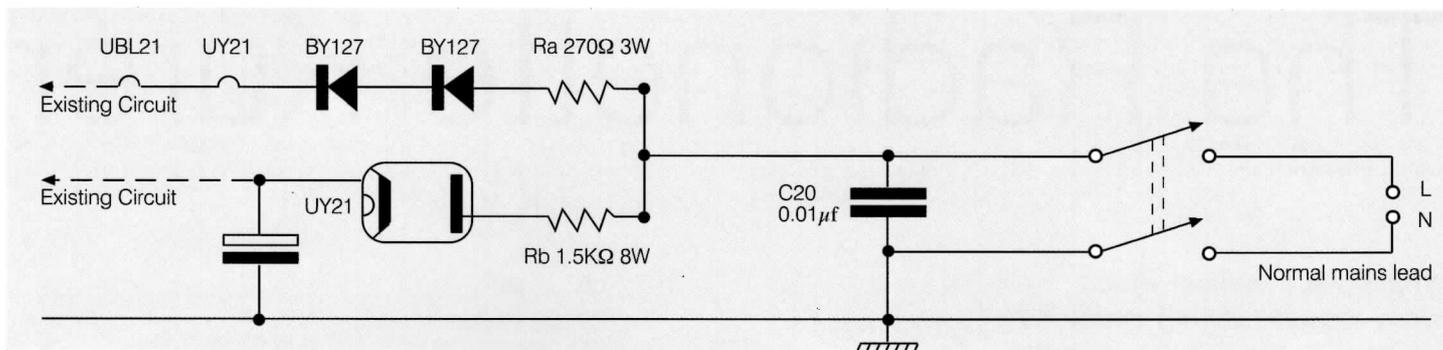
be no damage, the circuit functioning as before. The chances of both diodes shorting are very small indeed. In my opinion, this configuration is preferable to circuits where the second diode is placed across the heater chain, anode to chassis, to blow the mains fuse if the first diode becomes unidirectional; this is all well and good provided some bright spark doesn't keep upping the fuse value and trying again, ending up with tinfoil wrapped around a nail. It's also wise to change the on/off volume control to a double-pole switch type, as shown in the sketch, even at the risk of an increase in hum level.

In order to make space for the new resistors, we need to replace some of the old components with modern, small ones. We should do this anyway, since many of the original capacitors are the leaky wax-paper type. The low HT voltage means that the bulk replacement of these capacitors is not quite as expensive as on a normal set. You only require a working voltage of 150V or so for many of them, which means that space savings can be made. Ceramic disc or dogbone types are recommended. The original mains filter capacitor, C20, was a bulky component, and can be replaced by a modern capacitor of 250VAC min. The space thus liberated can be

second receiver was not afflicted with the problem; its valves could be rocked in their holders with merry abandon without provoking any of the ear-splitting symptoms mentioned above. Out of curiosity, and as a test, one of its UCH21's was put in the first set, and this miraculously cured its problems! No more crackles, just sweet restful music. Examination of the pins of the "good" valve from the second set suggests that its pins were a tad wider, (and longer) than those on the "bad" one, and this may have had something to do with it. So, the moral seems to be, try several UCH21's in your Alba, preferably selecting those with the largest pins, if you get this kind of fault.

Aside from these problems, the valves behave quite well, without radical loss of emission. The output valve has a particularly easy time of it, running well within its specification at the low HT mentioned earlier, keeping nicely cool and hopefully living longer as a consequence.

When aligning the C112's front-end, there appears to be an extra trimmer that is not mentioned on the circuit diagram. It's visible in an aperture in the chassis, next to C21. This is not a SW osc. trimmer- the set manages quite well without one of those- nor is it part of an IF



Suggested modifications

trap. In fact, it's just there for show, not being connected to anything! Perhaps Alba could only buy these trimmers in pairs. Designing for five, they had to fit six. Staying with the "Tuning Assembly", you'll find the wavechange switch is worryingly stiff, even after it has been cleaned and lubricated. As one switches bands, one fears for the life of the decorative but tiny knob. If, as a test, a normal size knob is temporarily substituted to get more torque, the control still feels heavy. There is, unfortunately, no way around this other than fitting a different type of switch, since the type fitted does not have the normal twin-ball-bearings locating device, where one can simply remove one of the ball bearings to reduce the force needed to rack it over.

Despite the reservations discussed earlier, it must be admitted that the IF transformers seem electrically well designed, with nice sharp peak settings which probably contribute toward the perceived good performance of the receiver.

The tone corrector C16 has quite a high value, 0.01uF, but this is a prudent choice; it compensates somewhat for the predictable

bass-lightness of the un baffled three-and-a-half inch speaker, and helps promote quite a pleasant sound. Value alterations are hence not recommended, but again, space may be saved by changing to a modern disc ceramic of, say 500V working.

#### The Set in Action

The Alba performs sensitively on all three bands, pulling in a good range of stations. The optimum aerial length seems to be about twenty feet. If shorter, the low-frequency end of MW may be weakened. Thanks to reasonably loose aerial coupling the set's front end tuning is not affected by aerial length, so this can be varied to suit local conditions, if required. (Alba thoughtfully provide "aerial tidy" hooks on the back cover around which you wind the wire when not in use). The AGC action however leaves a certain amount to be desired; local stations come blasting through with just a touch on the volume, but this control has to be well advanced if you're in search of those distant stations that are often used as a test of a radio's range.

The SW band that Alba have so laboured to

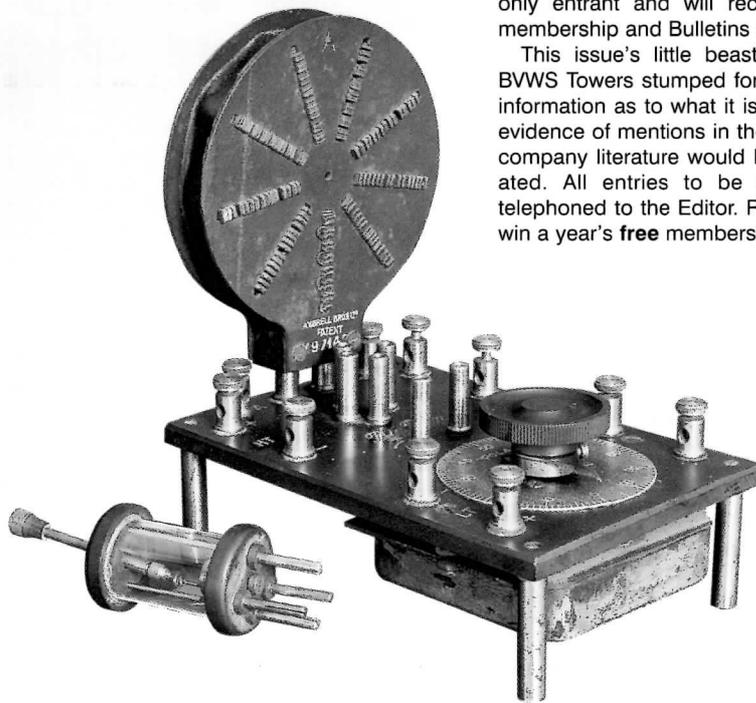
provide is intriguing rather than really functional; as noted, the tiny tuning scale is only two inches long, but tries to encompass the full standard 16-50m band. "Combing the ether" hence calls for a very steady hand indeed, especially at the low-wave end. The slightest unintended twitch or lack of concentration and you'll lose your station forever! This is a pity, since the gain is more than adequate, and well maintained at the high frequency end. As with many small, three-band sets, you get the feeling that SW was provided by the makers just to show they could do it as a technical tour-de-force rather than out of any clear demand or real utility.

So, where does the baby Alba stand? Its sensitivity and RF performance are more than creditable, its sound quality is very acceptable given the speaker size, and its dinky looks can melt even the stoniest heart. Its size beguiles, and soon seems almost sensible. In that sense, the Alba is very modern- a foretaste of mini radios to come- good and bad. Once you're used to it, most of its contemporaries seem like the Queen Mary.

# New Mystery Object

It would seem that the last Mystery object was more mysterious than previously realised. It yielded a mighty response of one; namely Steve Sidaway of London, who reckoned that it was a microphone amplifier. Could be. Steve is the winner by being the only entrant and will receive a years free membership and Bulletins etc.

This issue's little beastie has had us in BVWS Towers stumped for many a year. Any information as to what it is, and perhaps any evidence of mentions in the wireless press or company literature would be greatly appreciated. All entries to be posted / faxed / telephoned to the Editor. Remember you can win a year's free membership folks.



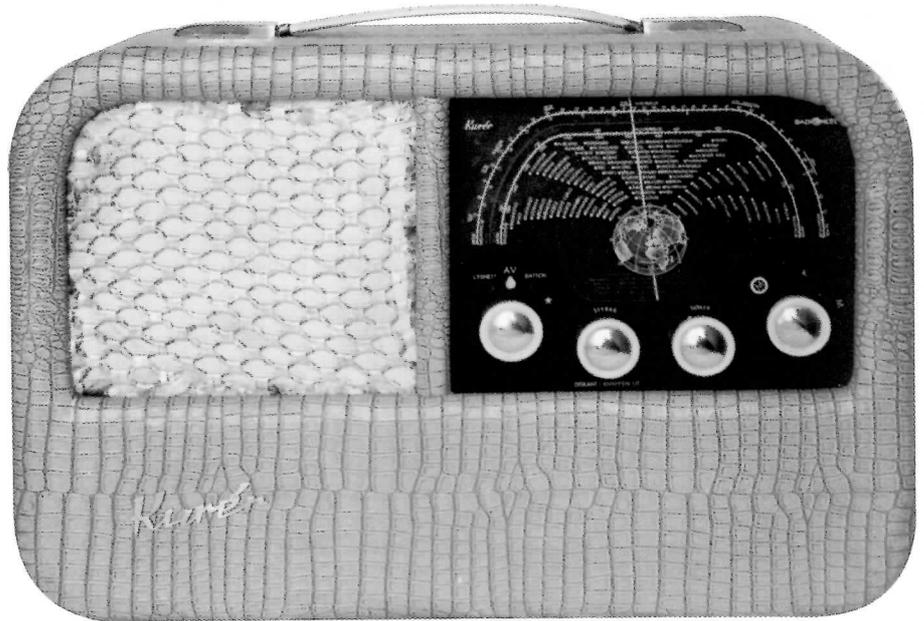
# The Radionette Kurér

by W. J. Williamson

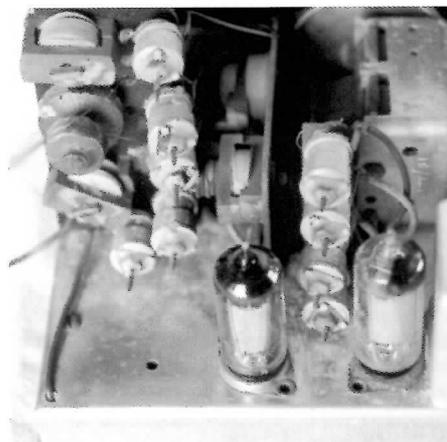
**Whaling is a subject which today arouses strong emotions but back in the '50s few people felt this way. Whaling was a way of life for a whole generation of men from the remoter regions of Britain. They sailed for South Georgia in Autumn and returned in the Spring. They always seemed to be relatively prosperous when they returned, though this was probably due less to the generosity of their wages than to the almost complete lack of anything to spend money on in the Antarctic!**

A certain amount of trading went on however, and as many of the whalers were Norwegian a popular purchase was a quality Norwegian portable radio. Typical of these is the Radionette Kurér.

Design philosophy in Norway seems to have quite different from that in Britain, where all too often performance was sacrificed in the interests of miniaturisation. No such compromise is apparent in the Kurér. Although it is not



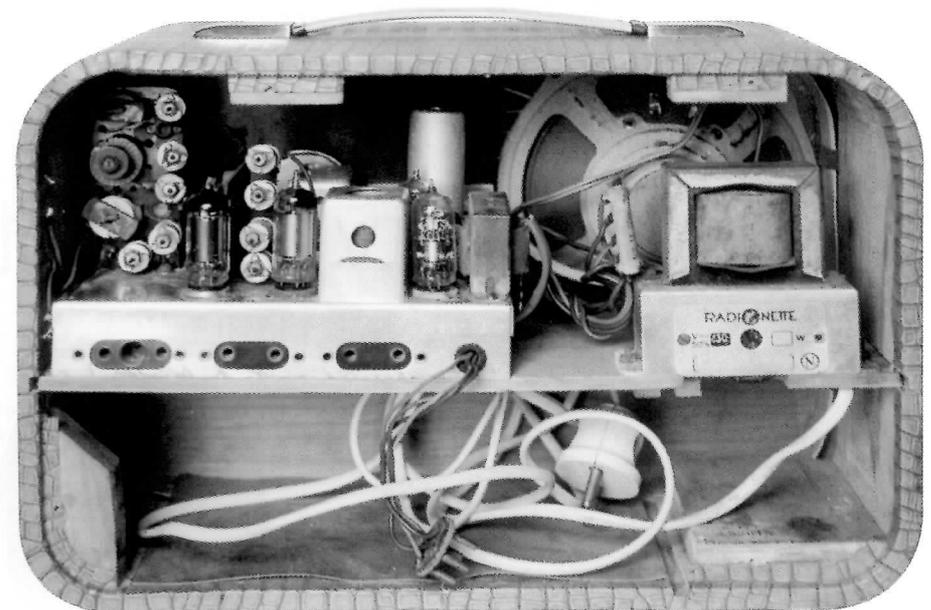
The Radionette Kurér



Detail of the coils and trimmers. Note the extensive use of ferrite cores

all that large ( 14"x 10"x 6") the wooden cabinet houses a 5.5 in. speaker. The Kurér is nothing if not versatile. It can be run from its internal battery or from A.C. mains of 230V, 150V, 130V, or 110V. These voltages are easily selected by a thumbwheel switch: too easily, perhaps. Sockets are provided for pickup and extension speaker. It also has aerial and earth connections and a socket for a car aerial.

It has 4 wavebands, long, medium, trawler and short. The trawler band was, of course, an important selling point for men from a fishing community. The wavechange switch has 6 positions as separate positions are provided to switch in the external aerial on long and medium waves. An unusual feature is the use



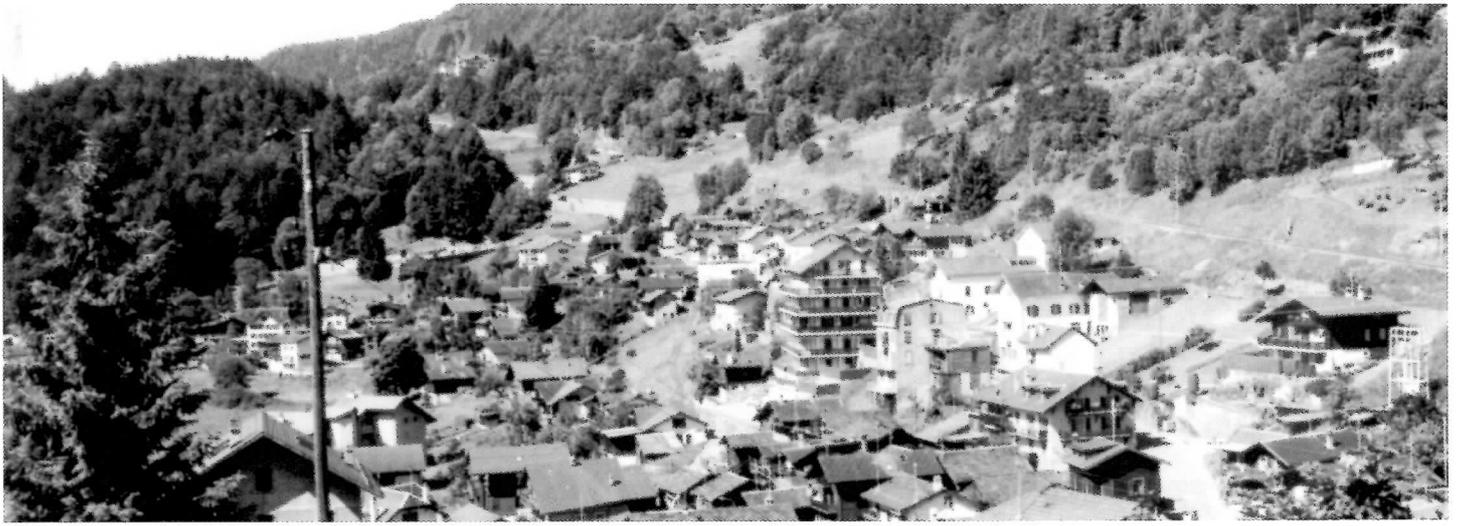
Rear view of the Kurér. Note the slide-in shelf

of 2 frame aerials, one for long and medium and the other for the short waves. The latter seems to be totally inaccessible as it appears to be embedded in the cabinet, only the connections to it being visible.

Apart from the usual complications with frame aerials the Kurér is easy to service. Undoing 4 screws removes the back, after which the chassis and power transformer can be seen, screwed to a wooden shelf which slides in grooves in the cabinet sides. After disconnecting the frame aerials the complete works, apart from the loudspeaker, can be slid

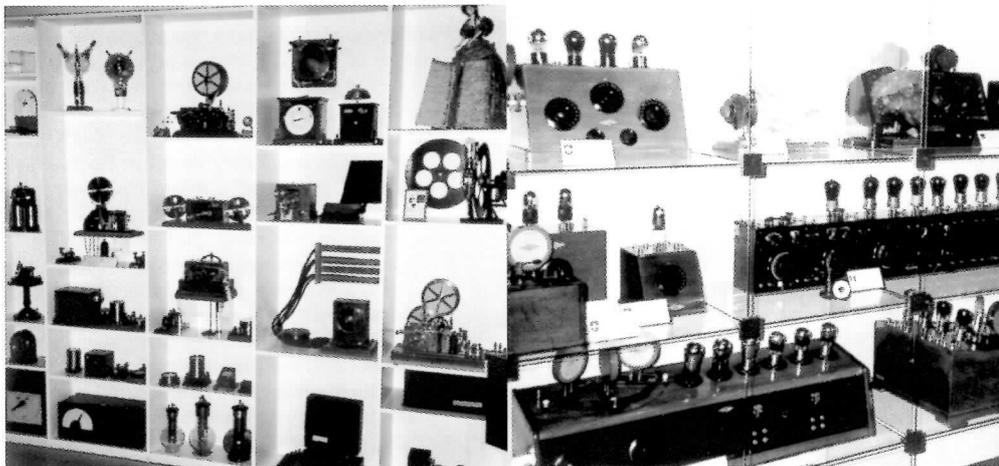
out. A hole in the shelf allows access to most parts beneath the chassis. The circuit is a fairly conventional 4 valve superhet using the 96 series of valves. Its features include delayed A.G.C. and negative feedback controlled by the volume control. The most striking feature is the use of ferrite cores for the I.F. transformers and the lower frequency coils. It is likely that these contribute substantially to the set's excellent performance.

I should like to thank my friend, ex-whaler John Nicholson for donating this interesting set to my collection.



## A postscript to a Marconi Mystery

by Pat Leggatt



Readers may remember that last year, in Bulletin 21/2, I gave an account of Max de Henseler's researches into the mystery of the plaque at Salvan in Switzerland commemorating Marconi's early wireless experiments there in 1896. May I briefly outline what has happened since, again as told me by Max.

Last year, 1996, the Salvan authorities decided to celebrate the centenary of the event. They secured the support of the Swiss Telecom PTT and asked the Swiss National Audiovisual Museum in Montreux - of which Max was then the Curator - to set up in their village an exhibition of early wireless and radio sets; and to assist in writing a booklet on Marconi in Salvan. The event opened in August 1996 with a re-enactment of Marconi's experiments by actors in contemporary costumes. One of the most notable guests was Professor Gian Carlo Corazza, President of the Marconi Foundation in Italy, who presented the Mayor of Salvan with a beautifully engraved silver plaque portraying the Villa Griffone and the Marconi Mausoleum.

The exhibition has been a great success and has attracted more than 5000 visitors so far. A replica of Marconi's transmitter could be operated, ringing a receiver bell some twenty yards away. The accompanying booklet (in French) entitled *Salvan: sur les pas de Marconi* (in Marconi's footsteps) is interesting-

ly written and illustrated.

In my earlier piece on this in Bulletin 21/2 I concluded that 1895 was the only possible date for Marconi's visit, rather than 1897, or 1896 as the plaque on the big rock La Pierre Bergère says. It seems that others have had similar doubts and a second small plaque has been added saying "Current research indicates that, contrary to what is mentioned on the plaque above, G. Marconi very probably effected his wireless experiments at Salvan during the Summer of 1895 rather than 1896".

Finally I suggested earlier that, if one were cynically inclined, one might imagine that Gay-Balmaz claimed to have assisted Marconi just to impress his Italian wife. I have since learned that Salvan with its bracing mountain air is renowned as a health resort; so it could well be that Marconi did visit there to overcome some respiratory trouble, and took his apparatus with him to avoid a break in his experimenting. Such a visit would not have been seen as of any particular importance at the time, and therefore not noted in Marconi's biographical details. So good wishes to Salvan's celebrations!

I myself visited Switzerland in June this year, staying in Montreux as the guest of Max and Renate de Henseler who couldn't have been kinder and more welcoming. Max drove me up to Salvan where I was able to see it all

for myself including the plaques and the very attractive little exhibition. The pictures show a view of the village from the Pierre Bergère rock, and one delightful crystal set on display.

I visited also the National Audiovisual Museum in Montreux. I had seen this several years ago when it was located in Lausanne under the stewardship of Gilbert de Montmollin, and was then most impressed with the exhibits and presentation. Seeing it now in Montreux was quite a disappointment, as it is not nearly as good as it was in earlier years, appearing very empty and lacking in imaginative layout. Many of the more interesting pieces are hidden away in a basement not open for general view. I think the present management could usefully recruit someone well-informed and concerned with wireless history and development.

Lastly Max took me to a wireless museum in Cornol, in north-west Switzerland near the French border. Run by Monsieur Schnoebelen, who is now joining the BVWS, it is perhaps the best collection I have ever seen and excellently displayed: I was consumed with envy for the hundreds of splendid things! The accompanying pictures show just a fraction of the exhibits.

# Wireless and the Advertising Postcard

by Willem Hackmann



Fig.1

The old postcards most popular with the average collector of antique radios are the advertising postcards, because they reproduce real sets and can therefore be useful in helping with dating and identification. They may supplement the information gleaned from advertisements in the contemporary periodicals and wireless magazines. Such material has to be used with care, however, as the object was sales and not necessarily accuracy. This material was after all not produced with future historians in mind! Thus, I could not identify Fig. 1 with any sets known to me - either in the flesh or as illustrated in the trade catalogues. The card is captioned: 'Sterling BBC Radio Receiving Sets, and Loud Speakers' The latter looks remarkably similar to the Magnavox R2B which was marketed by the Sterling Telephone & Electric Co. from the Autumn of 1922. The other sets depicted are a 'smoker's cabinet' somewhat similar to the R1588 and a flatbed, but not an 'Anodion'. This postcard was printed for the Sterling agent D. Slade of Battle to drum up trade. 'May our Representative call on you in order to describe the Sterling Wireless Receiving Sets and Loudspeakers?', he asks politely. 'If not convenient, we cordially invite you to take part at "listening-in" to Wireless Broadcasting with these instruments. Should you favour us with a visit, we feel sure that you will be interested and pleased.' It may well have been reproduced from a magazine advertisement. The images of other advertising post cards may well have begun life as posters, especially several of the striking ones shown here in colour.

The range and styles of the wireless advertising postcard are very varied and reflect the aesthetic ideas of the times. Advertising is as old as trading, and certainly must be counted as one of the 'oldest profes-

sions'! In ancient Rome professional 'poster painters' produced mural advertisements- a large number of *graffiti* publicising merchandise have been found on the walls of Pompeii. Advertising became an essential element in the growth of consumerism in the industrialisation of the West in the nineteenth century. The graphic arts became increasingly important for selling goods and for selling government policies—thus the industrialised democracies and the emerging totalitarian states (fascism and communism) embraced this visual form of communication. In this development technology and design fused. Among technological milestones were the invention of colour lithography in 1827, and of photography a few years later. In the late 1820s Joseph Nicéphore Niepce produced images on metal plates coated with light-sensitive asphaltum, and in 1839 his one-time partner Louis-Jacques M. J. Nicéphore announced his 'daguerreotype', the first of the true modern photographic processes in which the image was deposited on a silvered plate. The motive of both men had been to improve and speed up the lithographic process. Instead, they founded a new industry! The photographic process also became indispensable in advertising.

Advertising agencies began to appear in the mid 19th century, first in Germany and then elsewhere. Although important French and German artists of the standing of Toulouse-Lautrec, Pierre Bonnard, Max Klinger, Peter Behrens, J. Hoffmann and Joseph Olbrich were involved in poster design in France and Germany, the general artistic quality remained poor until the early 1920s. Thus, the revolution in graphic design coincided with the birth of broadcasting: there was the Bauhaus school in Germany with its

uncluttered functional designs, Soviet Constructivism inspired by Cubism, Italian Futurism with its streamlined geometrical machines, the rectangular and primary colour schemes of De Stijl movement in Holland, while in France Art Deco replaced the floriated madness of Art Nouveau. The impact can be seen in the architecture of the new Philco factory (Fig. 3) which was opened at Perivale, Middlesex in 1935, and the strong Art Deco designs of Figs 5, 7, and in particular Figs 14 and 6. The latter by a well-known French artist dates from around 1924 and is probably the best representative of the Art Deco *genre*. I do not know how accurately an actual Radiola set has been represented but that obviously was not the artist's chief concern. He was more interested in showing that listening to a Radiola had become a fashionable pastime for the entire family, while Fig. 5 from about 1930 focuses on the mystery of wireless. Anyone can join the broadcasting séance! On the other hand the American advertising card printed for the Neistadt Piano Co. of Baltimore in late 1929 (fig. 15) which depicts the RCA Radiola 66 is of a much more conservative design. Certainly, not all advertising postcards had exciting designs. The two postcards advertising 'Tudor' batteries (Figs 12 and 13) also depict 'listening in' as a family activity, but this time by Belgian burghers rather than the *mode moderne* French family of Fig. 6. The emphasis of these cards is on reliability. More vibrant designs are the 'R valve' (Fig. 8) and the Mazda high tension battery (Fig. 9), both French - as are the cards of the Philips Model 2514 with the Model 2007 bakelite speaker of 1928 (Fig. 10), over-printed on the back by the Philips' agent Maurice Pinard of Rochefort, and of the mid-thirties set by the Societé Lyonnaise Radioelectrique (Fig. 11).



Fig.2



Fig.3

Fig. 1 Sterling sets and Magnavox speaker on unused Representative 'calling card', c. 1924.

Fig. 2 BBC 5XX Daventry Station featuring on a card advertising Turner's Asbestos-Cement roofing tiles. Unused, c. 1924.

Fig. 3 Philco guarantee and insurance registration postcard. Unused, 1935.

Fig. 4 Printers advertising the effectiveness of advertising on bags. Used but not franked, late 1920s.

Fig. 16 Fine four valver by 'KL'. Real photograph postcard printed by 'LILYWHITE LD. TRIANGLE KVS', unfranked, c. 1924.

Figs 17 and 18 Two early Belgian mains sets, 1933.

Fig. 19 Advertising postcard by a small independent manufacturer in Swansea. Another real photo postcard printed by Lilywhite of Sowerby Bridge. Unfranked, early 1930s.

Fig. 20 Card promoting HMV Model 442

The graphic styles between the two World Wars evolved from high ornamentation inspired by Egyptian and Mayan designs to the stark geometry of Cubism and the simplicity of the Bauhaus and Purism. Echos can be seen in the designs of actual wireless sets depicted in these advertising post cards: the strict geometrical lines of the Belgian Ondolina 432 (Figs 17 and 18) which dates from 1933, and the sharp lines and 'zig zag' loud speaker grille of the HMV Model 462 and slightly more muted (but still very characteristic) appearance of Model 442. These two (Figs 21 and 20) are from a large set of promotional cards issued by His Master's Voice in the mid 1930s. Another is HMV Model 463 (A.C. Superhet Portable Fluid-Light Six'), Model 540 ('Superhet Five-Forty Radiogram'). What makes these cards so useful is the full specifications on the back. I have also come across several with blank backs: 'The New Superhet Concert Seven' issued (according to the rubber stamp on the back) by Victor Fred's Piano Furniture and Wireless store in Aberdare and the Superhet Selective Five' issued similarly by J.B. Cramer & Co. of Brixton who invites the potential purchaser on 21 August 1933 to '...call in and hear this fine Radio set or shall we bring it home and demonstrate. The price is only £15-15-0 payable at £1-0-0 monthly.'

These last two cards give no HMV Model numbers. E.H. Burch of Wimbledon is keen to remind you that 'we are still busy demonstrating the new Cossor receivers' on his 1930 card which shows the 'Cossor Four-Valve Portable Model P44' (Fig. 24), while G.W. Peacock of Swansea is the sole supplier of the 'Preselector Three' (Fig. 19). This card was printed by Lilywhite, a producer of real photographic postcards. This firm also printed Fig. 16 of a four valver 'cabinet receiver' of c.1924 reminiscent of those twenties gramophones with hinged lid and space for the records.

Another way to gain publicity was to combine radio sets with radio celebrities as was done in a large series of publicity cards issued by Columbia radios. The two illustrated are of Models 359 with Elsie and Doris Waters on the front (Figs 22) (identical to HMV Model 360), and Model 621 with Henry Hall (Fig. 23). Others in this series are of Model 357 ('Superhet "Five" All-Electric Table Model') with Albert Sandler and Model 1006 ('Superhet Battery Grand') with Gitta Alpar. According to the captions these *artistes* perform 'Only on Columbia Records' (others 'Only on Parlophone Records'). This type of publicity was very popular; I have come across any number of celebrities listening



Fig.4



Fig.16

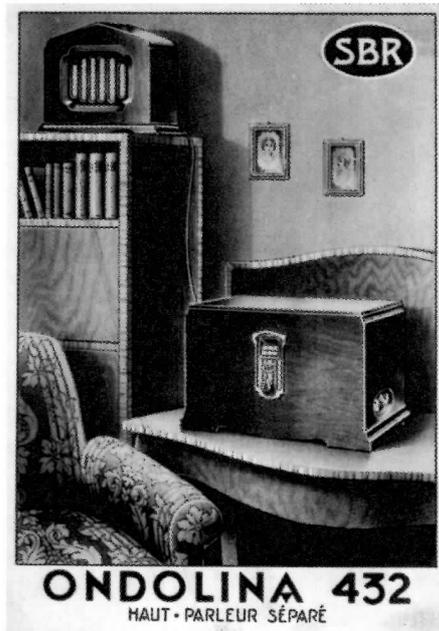


Fig.17

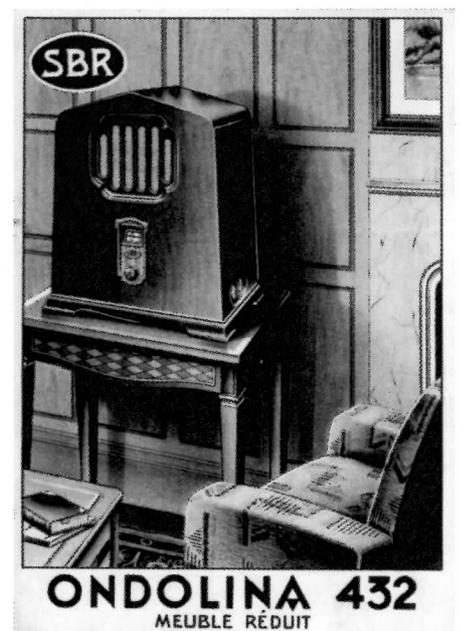


Fig.18

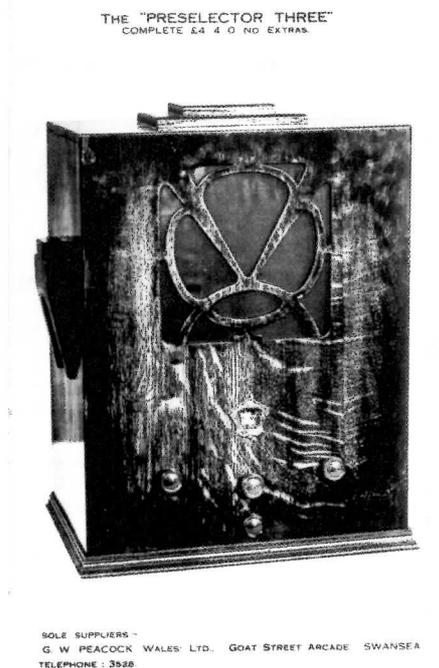


Fig.19

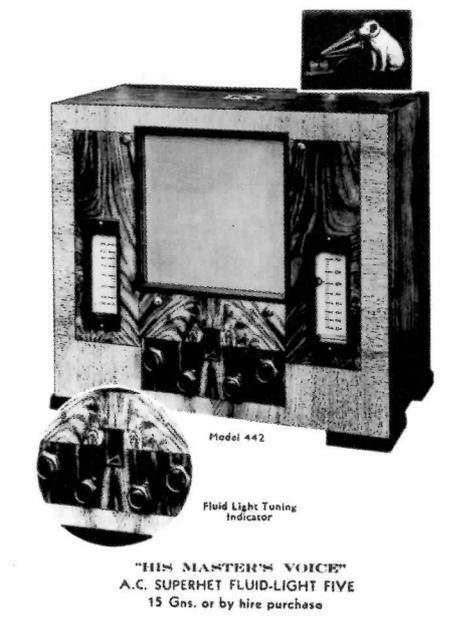
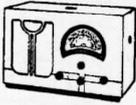


Fig.20

POST CARD



**SPOTLIGHT TUNING**—  
is the Novel Feature  
of this New Model

“SPOTLIGHT” FOUR ALL-ELECTRIC

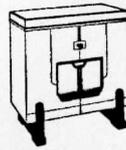
As you switch on, a spotlight, intersected by a hair line, leaps into view and enables you to tune in instantaneously, selectively, accurately. Although low in price, it is covered by the Columbia Guarantee of dependability, and its brilliant, clear-cut performance is heightened by the true Columbia TONE. Size: 16½ x 10½ x 9 ins.

Model 359 **Columbia**  
9 Gns **TONE Radio**  
9937/C/F

Address

Fig.22

POST CARD



**GIVES YOU MORE THAN THE WIRELESS!**  
Your Own Choice  
of Programmes by  
World-famous Stars.

**SUPERHET “FIVE” RADIOGRAM**

Brings not only radio but record programmes by your own stars—both with Columbia TONE. The best investment to-day. Size: 30½ x 27 x 16½ ins. Covered by guarantee. Presentation Album of 3 Columbia records.

Model 621 **Columbia**  
22 Gns **TONE Radio**  
9937/C/F

Address

Fig.23



Cossor 4-valve Portable Model P44. Price £6. 19. 0.

Fig.24



1268 A.G. 12-VALVE RADIOGRAM. WITH AUTO-CHANGER AUTO-FREQUENCY CONTROL. SPARTON PATENT AUTO-TUNING THREE SPEAKERS. RETAIL PRICE — 78 Gns

Fig.25

Radio Experimental Station G.2.V.M. Appointed Service Engineer Radio Association & Wireless League, London.

Established 1929.

**RADIO SERVICE**

(REGD.)

'Phone 629.

**F. H. HULME, F.R.A., M.I.R.E., M.I.W.T.**

THE RADIO DOCTOR

Will Test your Radio Receiver or Radio Gramophone, and issue full report.

FEE: 2/- per Valve Holder, or

Supply almost any make of Receiver, taking your present Receiver in part exchange.

**WHY BUY ACCUMULATORS**

When you can Hire same fully charged at roughly ¼d. per day?

(Descriptive Booklet FREE)

P.T.O.

Fig.28

“...winning golden opinions for the quality of its reception and simplicity...”  
*The Morning Post* 11/9/26.

**20/- DOWN**

**Brings to your home the World's Finest Wireless Set!**

- FREE Installation!—Free Service after Purchase.
- Perfect and Powerful Loudspeaker Reception!
- Great Range!—Simple to Work!
- Handsome Appearance!—Nothing Else to Buy!

**COMPLETE LOUSPEAKER SET COMES TO YOU ON FIRST PAYMENT OF 20/-**

Including Loud Speaker; Headphones; Dull Emitter Valves; Battery; Accumulator, etc., and Royalty is paid. There is nothing else to buy. Fitted up in your home just as you want it—free of charge—and left playing perfectly for you.

**TWO VALVE SET COMPLETE**  
Price: 20/- down and 20/- a month for twelve months only or £12 cash  
No References Required.

**THREE VALVE SET COMPLETE**  
Price: £4 down and 20/- a month for twelve months only or £15 cash

**See other side →**

Tasted! “...On test the set answered well—better than three other commercial sets tested by its side...the tone was good...”  
*Leeds Mercury* 15/2/27

Fig.26

**MARCONIPHONE (The First Name in Radio.)**

Having had many years experience in Radio, having the largest and best stocked Showrooms in Bristol, and a well informed staff of Technical Assistants, we claim to be able to give you an unrivalled opportunity in the selection of a Radio Set, and unbiased advice if required.

PRINCIPAL AGENCIES include also—His Master's Voice and Columbia, Philips, McMichael and Pye, Ekco and Kolster Brandes.

Please \* send Catalogues  
send Representative  
demonstrate

.....set

Name.....

Address.....

\* STRIKE OUT WORDS NOT REQUIRED

**HAMILTONS, Leading Bristol Marconiphone Agents.**

— BRISTOL'S RADIO HEADQUARTERS —

**39 & 40, Bridge Street, Bristol, 1,  
ALSO 45 TO 53 Church Road, Redfield, Bristol, 5.**

Fig.27

attentively to their special radio set prominently displayed. One of these of George Formby with his Pilot U650 radio was featured in Bulletin Vol. 20, No. 5 (October 1995), p. 73. A larger set of the same period is featured minus a celebrity in Fig. 25.

On the whole the English inter-war advertising postcards were less exciting than the

Figs 22 and 23 Two publicity postcards in a large series on radio celebrities but advertising Columbia Radios on the back. In this case Model 359 (the Spotlight Four All-Electric) with Elsie and Doris Waters on the front, and Model 621 (the Superhet “Five” Radiogram) with Henry Hall on the other side. Mid 1930s.

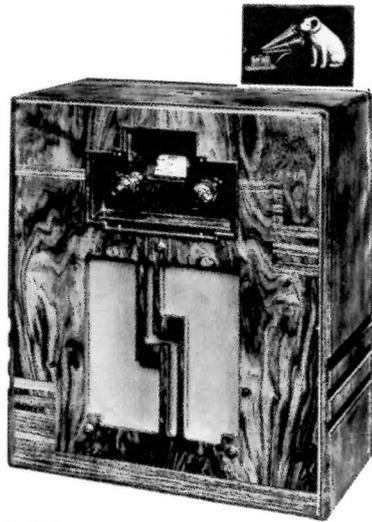
Fig. 24 Dealer's postcard advertising the Cossor Model P44, franked 26 July 1930.

Fig. 25 English postcard advertising the 1268 A.G. 12-valve radiogram with Sparton patent auto-tuning. Unfranked, late 1930s.

Fig. 26 Publicity postcard by the General Radio Co. Ltd of London, early 1927.

Fig. 27 Business reply card of a leading Marconiphone dealer in Bristol, mid 1930s.

Fig. 28 Postcard of a firm which hires its accumulators, early 1930s.



Model 462

"HIS MASTER'S VOICE"  
SUPERHET A.V.C. PORTABLE GRAND  
15 Gns. or by hire purchase

Fig.21

Continental ones. The most striking in my collection is of the Ferranti transformer 'A.F.3' which probably dates from the late 1920s. The background is of a brilliant red. A more typical English example of this period is the publicity postcard from early 1927 of the General Radio Co. of London advertising a (by then) rather old fashioned two-valve set and horn speaker (Fig. 26). Other cards have only plain text, such as the business reply card of a Bristol Marconiphone dealer of the early 1930s (Fig. 27), a card of about the same time of the 'Radio Doctor' F.H. Hulme who tested radios and hired out fully charged accumulators (Fig. 28), and finally, a card of the Chappell Piano Co. of London who is keen to sell you 'a new Push-Button Radio Set, Radio-Gramophone or Television Set', and invites you to 'inspect our wonderful display and compare all the best known sets side by side.'

American stations started the trend of sending out 'Applause Cards' in order to determine the popularity of their programmes. This example from 1923 (Fig. 30) advertises a horn speaker and head set marketed by the Dictograph Corporation. The radio amateur QSL cards also became the vehicle of

advertising. Typical examples are the Osram valve advertisement on an early card posted in Huddersfield in 1927 (Fig. 32) which received the signals on a Reinartz receiver with a 70-foot aerial and water pipe earth, the card of the GE Schenectady short-wave station W2XAF and W2XAD (Fig. 33) which has an illustration of the station with the caption 'The Voice of Electricity', dated 17 August 1936, the card of the Stockholm amateur SM5UD dated 23 November 1935 (Fig. 34) which features a Tungram valve for amateur stations, and lastly the QSL card (Fig. 35) advertising bakelite copper-clad laminated sheets for making printed circuits, dated 20 December 1964.

Advertisers of other products jumped very willingly onto the radio bandwagon. Turner Brothers Co. Ltd of Rochdale (Fig.2) advertised that their asbestos-cement tiles were keeping the rain out of 5XX at Daventry and the printers T. Harding, Son & Co. Ltd of Bath (Fig. 4) suggested that shopkeepers might like their wares broadcast on good quality bags. Another version in my collection reads: 'Broadcast your message by good printing'. Next to come: Comic Wireless in the Nursery.

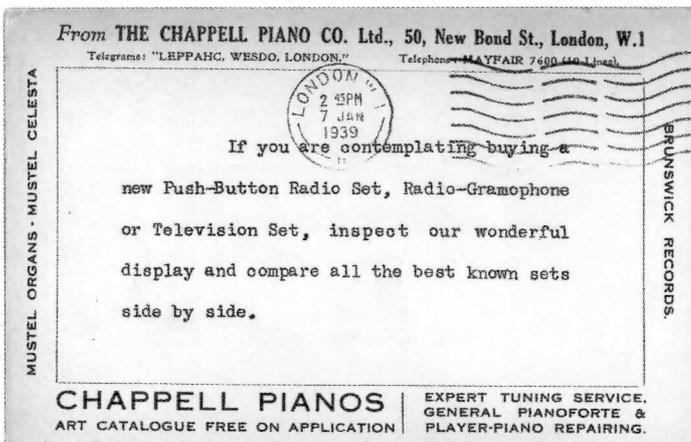


Fig.29

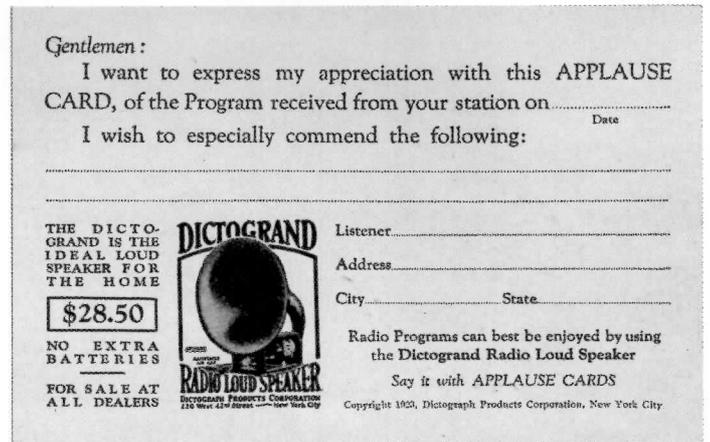


Fig.30

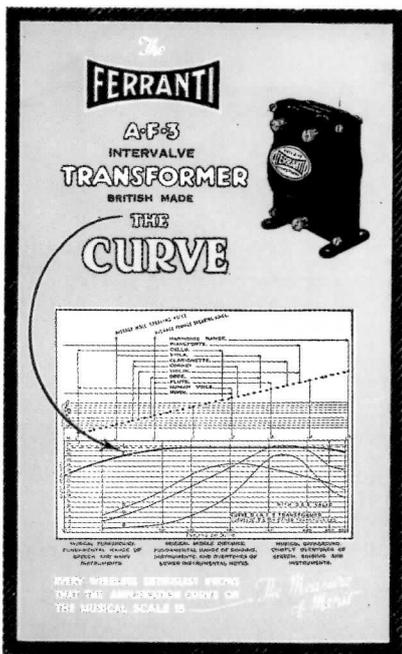


Fig.31

Fig 21 Card promoting an HMV set, in this case Model 462 Detailed specifications printed on the back of the card (numbered G 23001/F)

Fig 29 Advertising card of the Chappell Piano Co. of London, franked 7 January 1939

Fig. 30 American 'Applause Card' advertising the Dictogrand radio loud speaker. Unfranked, mid 1920s.

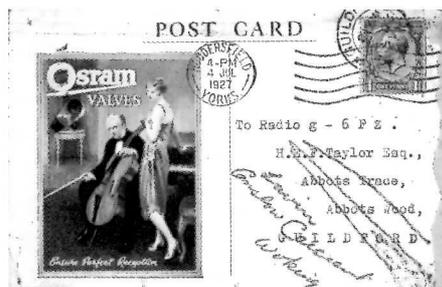


Fig.32



Fig.34

Fig 31 Fine advertisement for the Ferranti A.F.3 transformer. Unfranked, 1923

Fig 32 QSL card with Osram valve advertisement, posted from Huddersfield 4 July 1927

Fig. 33 QSL card acknowledging reception of GE's SW station W2XAF and W2XAD depicting the station on the front. Franked Schenectady 17 August 1936

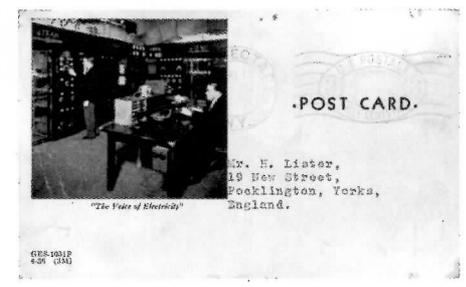


Fig.33



Fig.35

Fig 34 QSL card advertising Tungram transmitting valve, dated 23 November 1935

Fig. 35 QSL card advertising bakelite copper-clad laminated sheets for making printed circuits, dated 20 December 1964.



Fig. 5 Advertising postcard for early German mains set, c. 1930.

Fig. 6 French four-valve Radiola set with cone speaker. Unfranked, c. 1924.

Fig. 7. Advertisement postcard for Visseaux valves, Printed on back 'Imp. A.Alix.Lyon', no. 23.50000.9.30. Unfranked, late 1920s.

Fig. 8 R valve advertising postcard posted by Henri Dubuisson from Le Havre on 25 June 1925. Printed on back: 'Lapina, imp., Paris'.

Fig. 9. French postcard advertising the Mazda high tension battery. Franked, mid 1920s.

Fig. 10 French postcard advertising the Philips Model 2514 with the Model 2007 moving-iron paper cone speaker in bakelite bowl. Printed on back: 'H. FRANÇOIS, IMP, PARIS'. Unused, 1928.

Fig. 11 Société Lyonnaise Radioélectrique advertising a mid-thirties set. Printed on back: 'IMP. NOUVELLE DU SUD-EST, 34 R.P. VERLAINE, VILLEURBANNE'.

Figs. 12 and 13 Belgian postcards advertising Tudor



Fig.15

Fig.6



batteries. One unfranked and the other posted in Brussels on 18 January 1932.

Fig. 14 Striking postcard with four valver advertising the Liège International Science and Industry Exhibition of 1930. Unfranked.

Fig. 15 American postcard advertising the RCA Radiola 66 by the Neistadt Piano Company of Baltimore. Undivided back, unfranked, late 1929.

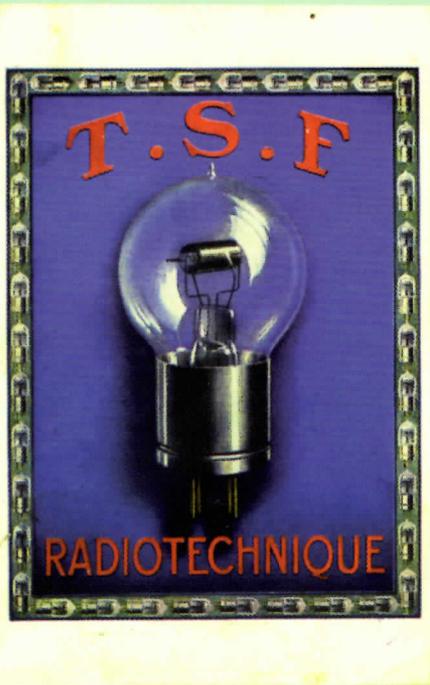


Fig.8



Fig.9



Fig.10

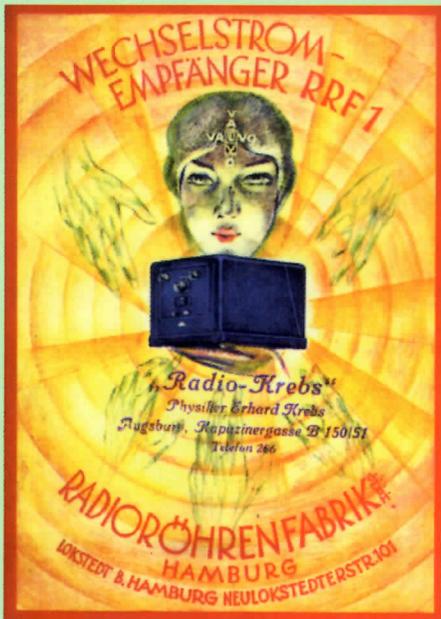


Fig.5



Fig.14



Fig.7



Fig.12

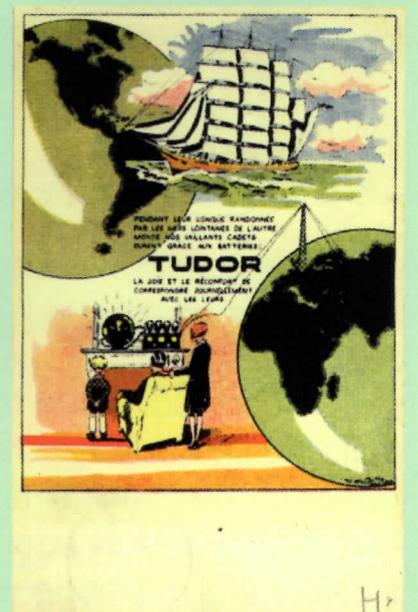
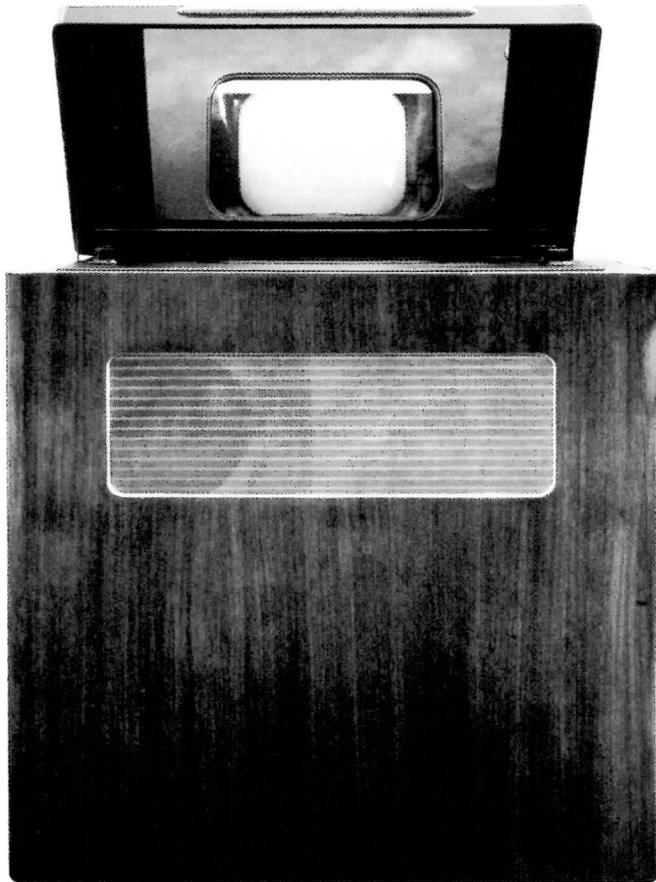


Fig.13



Murphy V136 sales leaflet 1948

**S. C. WITHERS,**  
53a, HIGH STREET, CRAWLEY,  
---Phone 22.---

*Radio, Television,*  
*Gramophone Records*

**YOUR MURPHY DEALER**

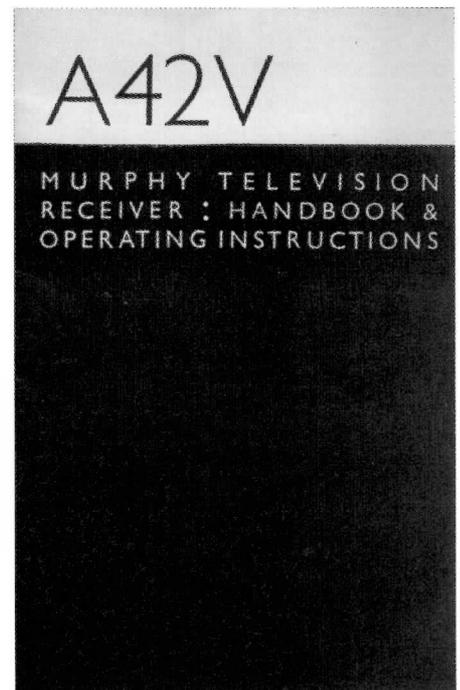
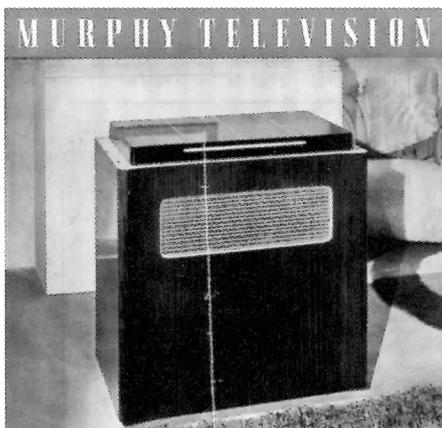
<p>MODEL V136 CHOSEN FOR THE PROGRAMME PRIZE</p>		<p style="text-align: right;">PRICE— <b>£61 - 13 - 4</b></p>
--	--	--

Also  
HIS MASTER'S VOICE, EKCO, McMICHAEL,  
COSSOR, ULTRA, MULLARD, G.E.C., INVICTA.  
Radio & Television.

*Public Address Equipment.*

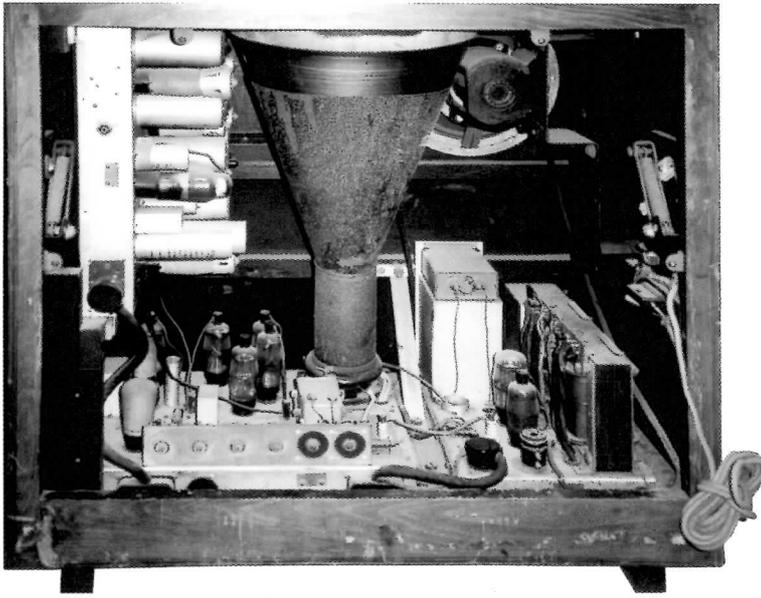
# The First Murphy Television Receiver

text and photography by Mike Barker



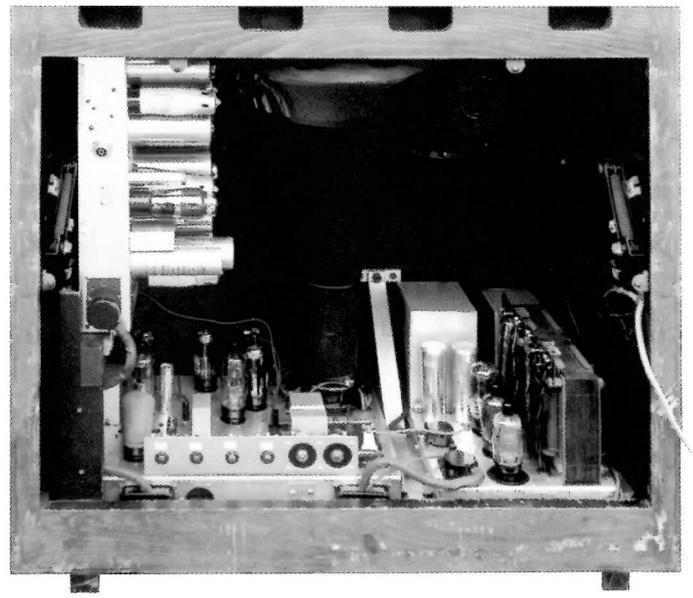
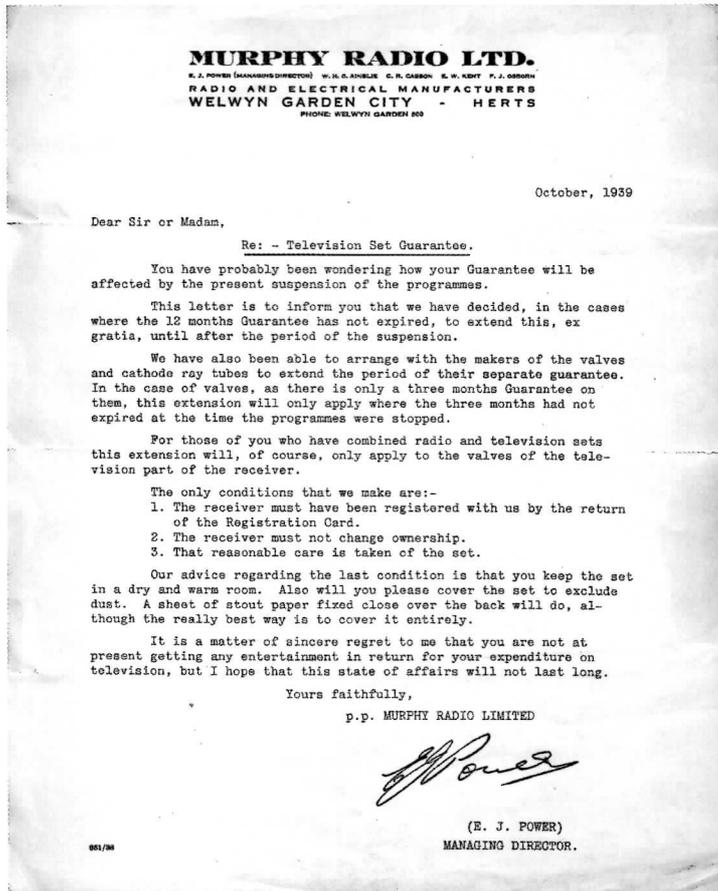
About 3 years ago, I received a call from a fellow member who said that he had been contacted by the owner of a very old Murphy TV. The owner wished to dispose of the set, so I contacted him to find out what set it was. Up until that time I had always stayed clear of collecting Television, due to space constraints, and the fact that they are usually late 1950's sets in poor condition, and because I spent some years repairing these things when the 405-line transmissions were still running.

I contacted the owner and found the set to be a Murphy V136 of 1948. I was intrigued to see if I could make the thing work. The set was purchased for a very nominal sum. After gathering the required parts to make a start and a lot of time and considerable expense I was able to use the set. This was the start of something much bigger. I have still continued to collect anything made by Murphy, but I have taken a greater interest in the articles about Television receivers, especially those pre-war. There appear to have been very few pre-war televisions made by Murphy, most of which were produced in very small quantities. The A56V and A58V sets were produced in 1938. The A56V at £30 was sold in greater



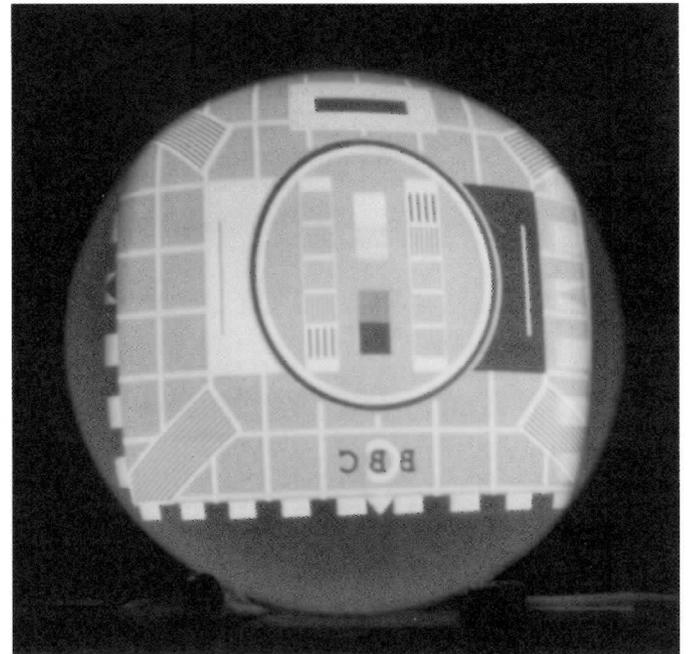
Above: the Murphy before restoration

Below: A letter from Murphy Radio Ltd. regarding the outbreak of hostilities in 1939 and extending the guarantee until transmissions returned.



Above: the Murphy after restoration

Below: pictures viewed directly from replacement tube, image is reversed as it not seen via the mirror in the lid of the set.



quantities than many other manufacturers' sets due to its compactness, quality and low price. Others, being 1939 models, (V84,V88c) almost certainly never went into production, although the V86c was produced, of which many were stored until after the war and then released with minor modifications. Murphy Radio entered the commercial market of Television a little later than some other manufacturers, waiting until 1937 before releasing their first receiver. Four years prior to this the company set up a special laboratory to explore the options of producing a Television receiver. With the broadcast standard being set at 405 lines using the EMI system of interlaced scanning, the company

were able to design and produce a small number of test receivers. These were used in 1936 for signal quality testing in and around the London area and to assess the feasibility of commercial television production. With encouraging results they decided to produce a television receiver for the 1937 range. A company statement suggested that it would be a combined radiogram and television, but this was not to happen. The result, the A42V was a television only that was designed, without regard to cost, to give as sharp and bright a picture as possible.

The previously designed experimental receiver was adapted and modified to use the latest valve technology and the best possible

circuit design. The television electronics were based around the established Murphy receiver technology and the circuitry suggested by the Ediswan Mazda Company for the time bases, using their valves and television tube. Unlike EMI, Murphy decided on an electrostatically focused tube, the Mazda 12H, an 11.5" diameter tube being used in this case to give a picture size of 9" x 7" without apparent curvature distortion in the corners of the screen.

I heard of the existence of a few Murphy A42V receivers, but these were all in Museums. Only 2 examples were known to be in private hands. I contacted the owners of these sets for more information, and found

**Murphy A42V Components Listing**

**Power Chassis**

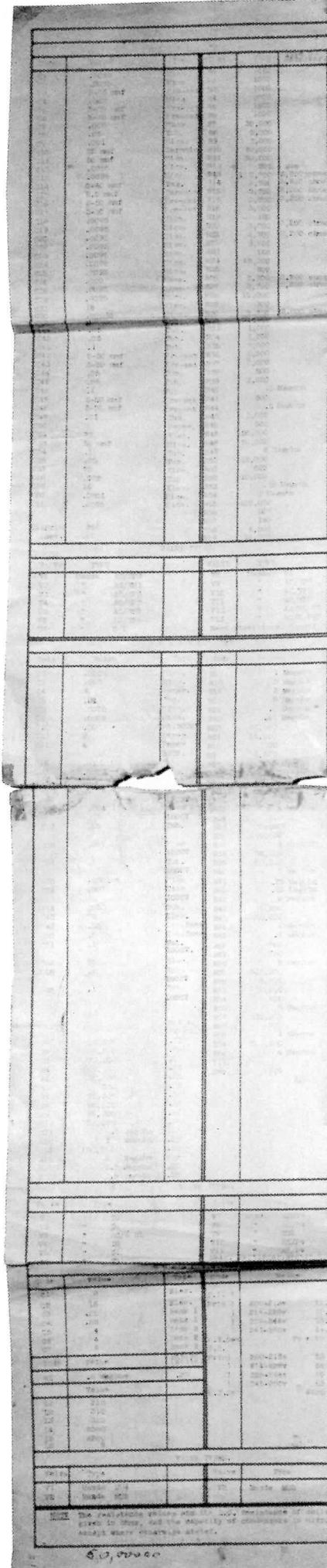
R1	0.5 MΩ		
L1	310Ω		
L2	310Ω		
L3	310Ω		
L4	2500Ω		
L5	2800Ω		
L6	9Ω		
V1	Mazda UU4		
V2	Mazda MU2	ΩMercury Vapour)	
V3	Mazda MU2	ΩMercury Vapour)	
T1	HT supply and Valve Filaments		
T2	5000V and 1200V supplies		

**Sound and Vision Receiver chassis**

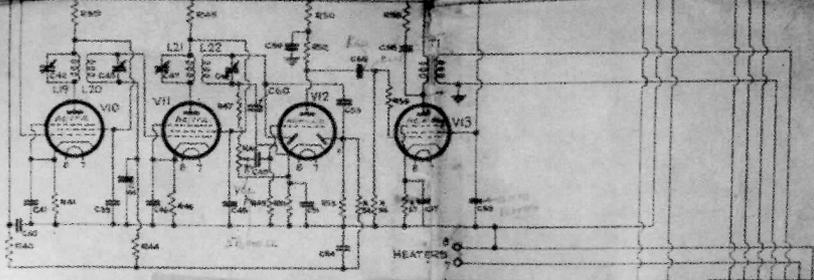
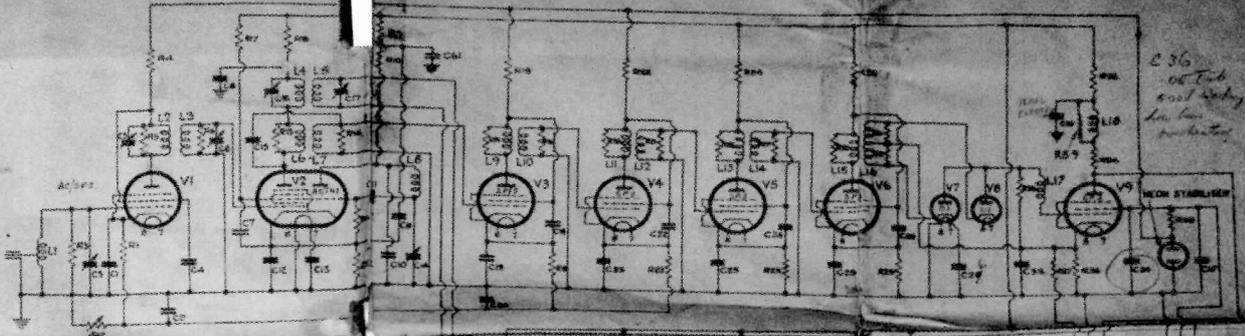
R1	160Ω	R31	20000Ω	C1	.0095uf	C31	
R2	1000Ω	R32	20000Ω	C2	.0095uf	C32	
R3	1000Ω	R33	1000Ω	C3	5-25mmf	C33	16uf elec.
R4	3200Ω	R34	2000Ω	C4	.002uf	C34	
R5	1600Ω	R35	2000Ω	C5	5-25mmf	C35	.09uf
R6	1000Ω	R36	1000Ω	C6	5-25mmf	C36	
R7	20000Ω	R37	2000Ω	C7	.002uf	C37	8uf elec.
R8	2000Ω	R38	500Ω	C8	.05uf	C38	
R9	2000Ω	R39	2000	C9	.001uf	C39	.05uf
R10	40000Ω	R40	0.5 MΩ	C10	25mmf	C40	.05uf
R11	50000Ω	R41	500Ω	C11	50mmf	C41	.1uf
R12	200Ω	R42	omitted	C12	.0095uf	C42	5-50mmf
R13	2700Ω	R43	omitted	C13	.0095uf	C43	5-50mmf
R14	2700Ω	R44	0.5 MΩ	C14	0-40mmf	C44	.05uf
R15	2700Ω	R45	2000Ω	C15	2.5mmf	C45	.05uf
R16	2700Ω	R46	500Ω	C16	5-50mmf	C46	.1uf
R17	omitted	R47	50000Ω	C17	5-50mmf	C47	5-50mmf
R18	3200Ω	R48	50000Ω	C18	.0095uf	C48	5-50mmf
R19	160Ω	R49	2 MΩ	C19	.0095uf	C49	.01uf
R20	2700Ω	R50	10000Ω	C20	.0095uf	C50	2uf
R21	2700Ω	R51	600Ω	C21	.0095uf	C51	75uf elec.
R22	3200Ω	R52	10000Ω	C22	.0095uf	C52	
R23	160Ω	R53	0.25 MΩ	C23	.0095uf	C53	50mmf
R24	15000Ω	R54	2 MΩ	C24	.0095uf	C54	.1uf
R25	200Ω	R55	0.1 MΩ	C25	.0095uf	C55	.05uf
R26	2700Ω	R56	500Ω	C26	.002uf	C56	
R27	2700Ω	R57	140Ω	C27		C57	75uf elec.
R28	15000Ω	R58	6500Ω	C28	.0095uf	C58	.025uf
R29	300Ω	R59	10000Ω	C29	.0095uf	C59	16uf elec.
R30	2700Ω			C30		C60	.001uf
						C61	.0095uf
T1	Audio output transformer						
V1		Mazda AC/SP3		V9		Mazda AC/SP3	
V2		Mazda AC/TH1		V10-V11		Mazda AC/VP2	
V3-V6		Mazda AC/SP3		V12		Mazda AC/HL/DD	
V7-V8		Mazda D1	V13			Mazda AC/2PEN	
Neon Stabiliser	Cossor S130						

**Amplitude filter & Time Bases chassis**

R1	10000Ω	R31	?	C1	.0002uf	C31	omitted
R2	10000Ω	R32	?	C2	omitted	C32	.001uf
R3	20000Ω	R33	4 MΩ	C3	.002uf	C33	omitted
R4	0.5 MΩ	R34	900Ω	C4	2uf	C34	.1uf
R5	0.1 MΩ	R35	50000Ω	C5	.01uf	C35	.000125uf
R6	300Ω	R36	0.1 MΩ	C6	omitted	C36	.001uf
R7	25000Ω	R37	4 MΩ	C7	omitted	C37	omitted
R8	50000Ω	R38	50000Ω	C8	.0005uf	C38	omitted
R9	25000Ω	R39	50000Ω	C9	.0005uf	C39	omitted
R10	50000Ω	R40	2 MΩ	C10	.002uf 5Kv	C40	omitted
R11	0.5 MΩ	R41	0.25 MΩ	C11	omitted	C41	omitted
R12	1 MΩ	R42	0.25 MΩ	C12	omitted	C42	omitted
R13	0.1 MΩ	R43	2 MΩ	C13	2uf	C43	omitted
R14	5 MΩ	R44	5000Ω	C14	omitted	C44	.002uf
R15	1.5 MΩ	R45	50000Ω	C15	4uf	C45	75uf elec.
R16	0.8 MΩ	R46	1 MΩ	C16	.01uf	C46	omitted
R17	1 MΩ	R47	0.9 MΩ	C17	omitted	C47	omitted
R18	5 MΩ	R48	300Ω	C18	omitted	C48	omitted
R19	3 MΩ	R49	700Ω	C19	omitted	C49	.25uf
R20	5 MΩ	R50	2 MΩ	C20	omitted	C50	.5uf
R21	0.5 MΩ	R51	0.3 MΩ	C21	omitted	C51	.1uf
R22	0.45 MΩ	R52	3600Ω	C22	omitted	C52	25uf elec.
R23	50000Ω	R53	2000Ω	C23	.0003uf	C53	omitted
R24	25000Ω	R54	700Ω	C24	?	C54	omitted
R25	700Ω	R55	5 MΩ	C25	?	C55	omitted
R26	1200Ω	R56	0.2 MΩ	C26	?	C56	omitted
R27	3 MΩ	R57	700Ω	C27	.004uf	C57	omitted
R28	900Ω	R58	4 MΩ	C28	.05uf	C58	.1uf
R29	1000Ω	R59	0.3 MΩ	C29	omitted	C59	.1uf
R30	omitted	R60	4 MΩ	C30	omitted		
T1	Tube, DC restoration and boost supply						
V1-V2		Mazda D1		V7-V8		Mazda AC/P4	
V3		Mazda AC/2 HL		V9		Mazda AC/P4	T31 Ωgas triode)
V4-V5		Mazda D1		V10-V11	Mazda	AC/P4	
V6		Mazda T31 Ωgas triode)					

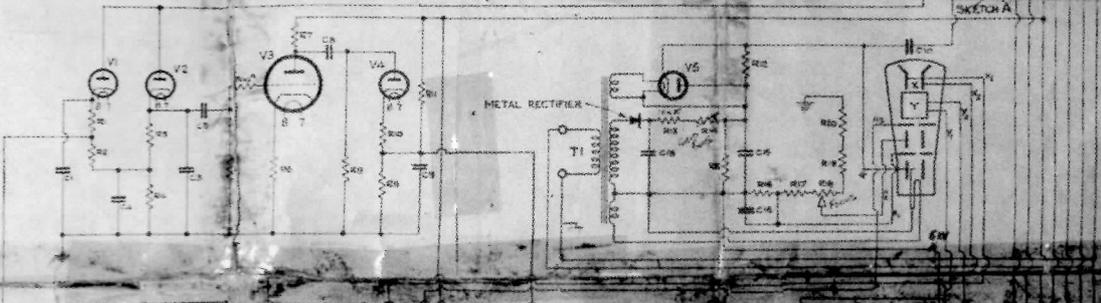


E36  
05 Feb  
6007 4000  
for the  
prototype

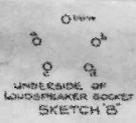


SOUND & VISION  
RECEIVERS  
CHASSIS A

Tube Type L2M



AMPLITUDE FILTER  
& TIME BASES  
CHASSIS B



POWER SUPPLY  
CHASSIS C

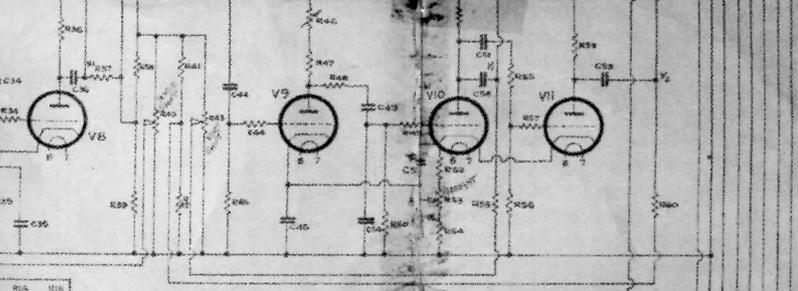


DIAGRAM OF CIRCUIT. A42V

DESIGNED BY: R.S. 4837  
CHECKED BY: K.S.S.  
DRAWING NO: DRG Y 3895

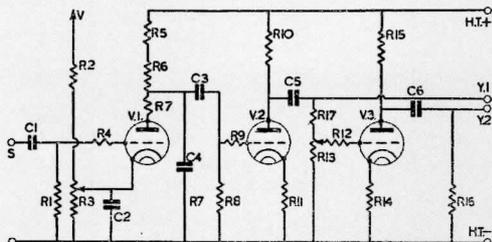
MURPHY RADIO CO. WELWYN GARDEN CITY

# TELEVISION SCANNING CIRCUIT FOR HIGH DEFINITION

The circuit below shows a thyatron-operated scanning circuit for use with the Ediswan 12H cathode ray tube on 405-line E.M.I. System B.B.C. Transmission. The values have been carefully chosen to give the optimum size of picture with the tube operated at 5,000—5,500 v. and the H.T. supply to the time base of 1,200—1,300 v. With higher tube H.T. the higher value of time base H.T. should be used. The values specified will ensure the maintenance of picture size during the useful life of the Valves.

The bias for the thyatron is intended to be obtained from the H.T. supply to the video receiver, and the line marked "V" should be connected to the appropriate supply terminal. The point marked "S" is connected to the output of the synchronising valve in the video receiver.

The average consumption of the time base is 7—9 mA for the picture frequency and 13—15 mA for the line frequency. The resistance R.2 in each circuit should be adjusted so that a current of 3 mA is flowing through the bias resistance R.3.



### VALUES OF COMPONENTS

Picture Frequency Circuit.

R.1	50,000 ohms, ½-watt.	R.13	1 megohm, variable.
R.2	See Notes.	R.14	11,000 ohms, ½-watt.
R.3	2,500 ohms, variable.	R.15	200,000 ohms, 3-watt.
R.4	50,000 ohms, ½-watt.	R.16	5 megohms, ½-watt.
R.5	0.75 megohms, variable.	R.17	4 megohms, ½-watt.
R.6	0.4 megohms, 2-watt.	C.1	—
R.7	400 ohms, ½-watt.	C.2	50 mfd., 12 v. elec.
R.8	2 megohms, ½-watt.	C.3	25 mfd., 1,000 v. working.
R.9	500 ohms, ½-watt.	C.4	5 mfd. " " "
R.10	200,000 ohms, 3-watt.	C.5	0.1 mfd. " " "
R.11	11,000 ohms, ½-watt.	C.6	0.1 mfd. " " "
R.12	500 ohms, ½-watt.		

Valves: V.1, Mazda T.31 Thyatrons (see p. 39). V.2, 3, Mazda AC/P.4 Special Triodes (see p. 38.)

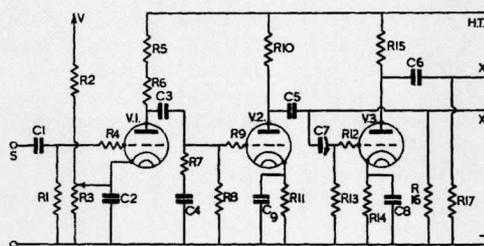
#### NOTES

If the paraphase tapping is fixed the ratio should be 8:3:1. For integrator type synch.: separators the resistance R.4 may have a value between 30,000 and 50,000 ohms and C.1, may be 0.1 mfd.

# LINE FREQUENCY CIRCUIT

In the line frequency scanning circuit shown below the grid of the second paraphase valve is fed from the condenser C.7, the paraphase tapping being obtained by the potential divider formed by C.7 and the total input capacity (including Miller capacity) of the second valve. The potential divider will automatically adjust itself to provide the correct input to the second valve.

An additional advantage of this system is that by making the grid leak of the second valve 1 megohm, the hum voltage developed at the second grid is negligible. In practice with full wave rectification a ripple voltage of 0.3 v.r.m.s. is permissible on the H.T. line. With half wave rectification a ripple voltage of 0.2 is permissible.

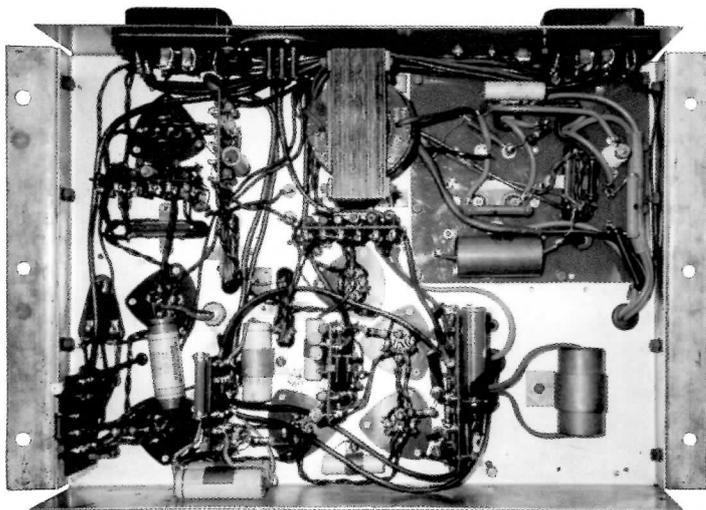


### VALUES OF COMPONENTS

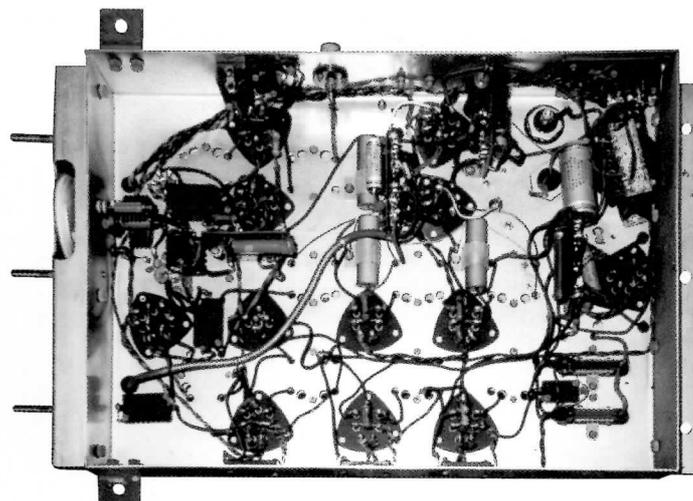
R.1	50,000 ohms, ½-watt.	R.15	90,000 ohms, 4-5-watt.
R.2	See Notes.	R.16	2 megohms, ½-watt.
R.3	3,000 ohms, variable.	R.17	2 megohms, ½-watt.
R.4	5,000 ohms, ½-watt.	C.1	0.0005 mfd.
R.5	0.75 megohms, variable.	C.2	1 mfd.
R.6	0.6 megohms, 2-watt.	C.3	0.05 mfd., 1,000 v. working.
R.7	400 ohms, ½-watt.	C.4	0.03 mfd. " " "
R.8	1 megohm, ½-watt.	C.5	0.02 mfd. " " "
R.9	500 ohms, ½-watt.	C.6	0.02 mfd. " " "
R.10	90,000 ohms, 4-watt.	C.7	10 mfd., variable.
R.11	5,000 ohms, ½-watt.	C.8 & C.9	1 mfd.
R.12	500 ohms, ½-watt.		
R.13	1 megohm, fixed, ½-watt.		
R.14	5,000 ohms, ½-watt.		

Valves: V.1—Mazda T.31  
V.2 & 3—Mazda AC/P.4

Two pages reproduced from 1937-8 Mazda valve manual



Underside of timebase chassis after restoration



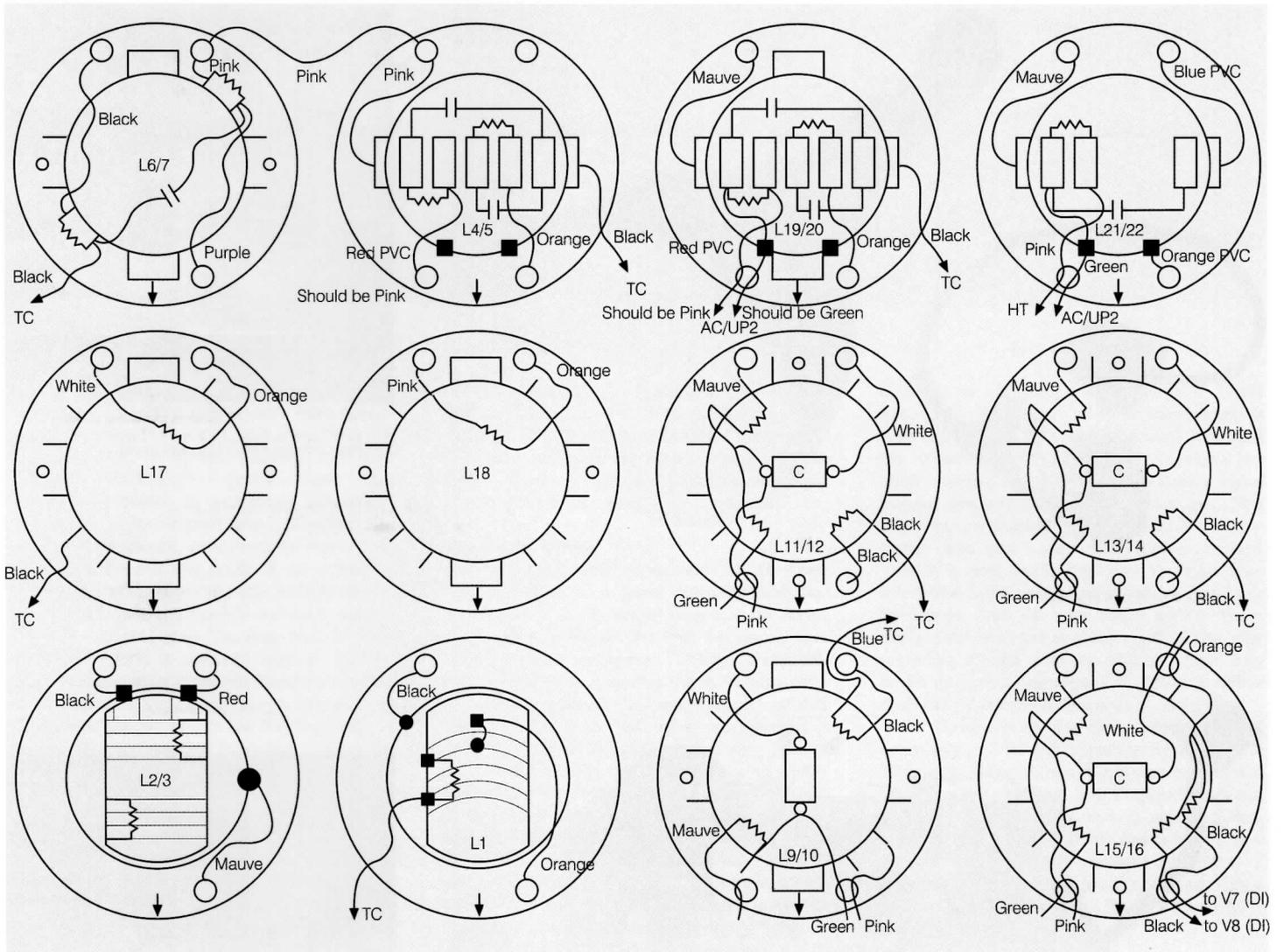
Underside of receiver chassis before restoration

that one had been modified over the years for Band III reception, whereas the other had almost completely survived any changes and was in very good condition. After some time and negotiation the owner agreed to sell me the set. This was a fantastic opportunity and meant that it would become part of a Murphy collection that will be kept together. The first problem came when the set was delivered last July, as it weighs 219 lbs, and is very difficult to lift as all the weight is at one end. I had to get the set into the car, which took 3 people and a lot of careful manoeuvring. Of course

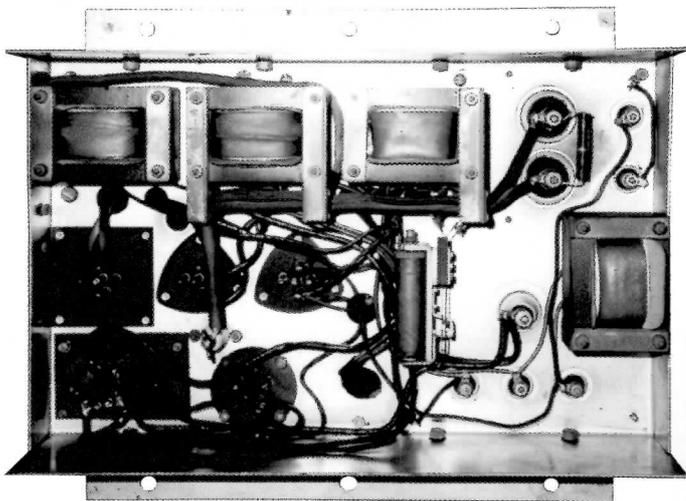
the problem was then to get it back out. The set was then dismantled and photographed in detail for reference. The power pack was first out, (not so easy due to its weight) and then the tube. To get the tube out, you have to remove the top panel and protective glass and lift the tube out of its socket. This proved to be a very tricky job. The tube was loose in its base and had suffered some electrical breakdown in the past, where a wire had been attached to the tube socket. After snipping the wire and waiting for my heart to stop pounding due to the danger involved in

pulling this huge glass bomb out of its case, whilst wearing protective clothing and goggles, I managed to get the tube free of the set. I was amazed at the sheer weight of the tube. Next the timebase and radio chassis were removed. The timebase chassis had suffered some repairs within the last 35 years, with 1960's Radio Spares components and sleeving in parts of the high voltage section.

The radio chassis, which has a sealed metal base, was in remarkably good condition, with just a small amount of PVC wiring on the HT line and a replacement output transformer



Coil cans on receiver chassis



Underside of power supply before restoration



Receiver chassis after restoration

and electrolytic. The power pack had also suffered some modifications, with a large TCC slab electrolytic mounted on the top of the chassis instead of the two tubular wet electrolytics which had obviously failed a long time ago.

The restoration began. First the power pack was dismantled. Everything was removed from the chassis, and then the chassis was cleaned to remove the dirt and corrosion, but not the original finish.

The two transformers, one supplying the 5000v and 1200v HT for the tube and timebas-

es, and the other for the valve filaments and the 250v HT lines, were tested and the very large original TCC capacitor blocks used for the 5000v and 1200v smoothing were reformed over a long period.

A pair of TCC tubular electrolytics were rebuilt and all rubber wiring under the chassis was replaced with high voltage rubber-covered wire. The power pack was then re-assembled and ready for testing.

With great thanks to Dave Grant, who supplied a Mazda mercury vapour rectifier MU2 that was originally missing, I was able to

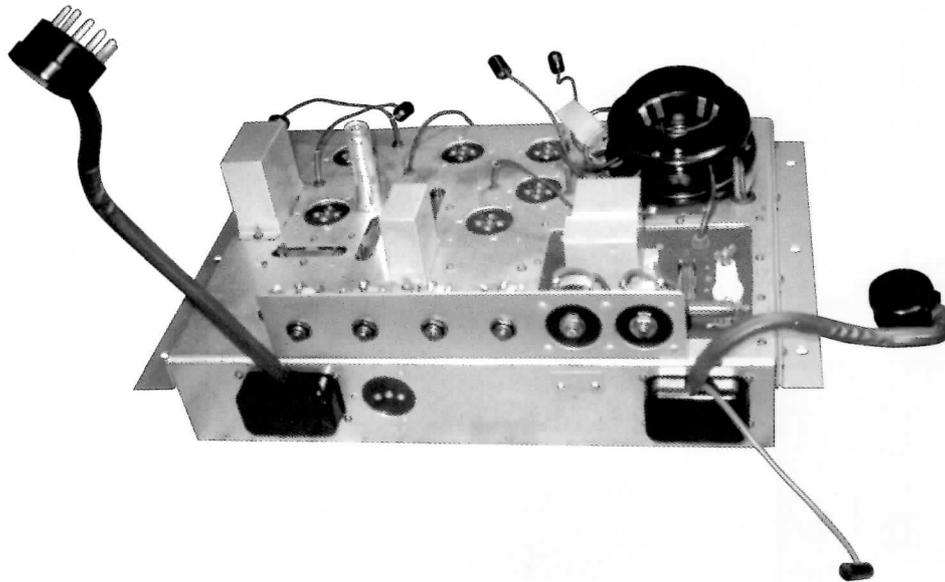
prove the power pack would do its job again.

The power supply is quite standard with the exception of the mercury vapour rectifiers, for the higher voltages. The current to these applied only after the other valves in the set have warmed up and HT current is being drawn to energise a small relay supplying the high voltage transformer with mains voltage. This makes the picture come on at full viewing brightness the instant it appears and with the accompanying sound of a current surge and a flash of mauve light from the rectifiers.

Next I started on the receiver chassis. The



Replacement tube and adapter



Timebase chassis after restoration

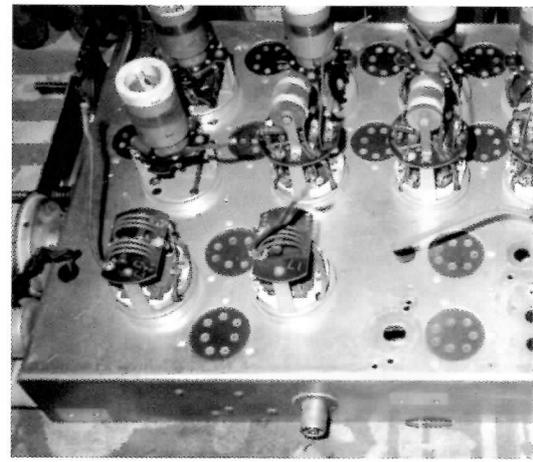
later replacement parts were removed and from a scrap Murphy set a spare audio output transformer with the correct impedance was found.

Some stress was visible on the resistors in the HT line, and almost every anode feed resistor had gone high by as much as 40-50%. Each coil can was removed from the chassis and then checked, cleaned and the components in them rebuilt or replaced. These coils are much easier to work on when not bolted down, and components can be found hidden under their bases. I had some degree of trouble with one coil set, as both the primary and secondary were open circuit. On inspection down the centre of the coil former, green spots on the wire could be seen, just where it disappeared through the small holes. This was made even more complicated as there were two formers, one inside the other, and the wires were almost impossible to get to. With some frustration I was able to make new joints and bring out new drop wires to the solder tags. The whole chassis was cleaned and all the other components tested or rebuilt

so that visible originality would be preserved. A number of other resistors were replaced with period items and the coils and other components were once again bolted down. All the wires to the valve top caps were replaced with some rather nice American cotton-covered lead that is identical in appearance to the original.

A full set of new valves was obtained for this section of the receiver, although I did have to resort to using a military version of the S130 and transplanting the Cossor label from the original. This neon stabiliser is an unusual feature, and I wonder if there were problems with drifting in the prototype model from the previous year. It does do its job very well, and there is no apparent tuning drift or any need to adjust the set at all whilst watching.

Now came the timebase chassis. I had left this to last, thinking that it was going to cause me most of the problems in the restoration. I was not wrong! The tube socket had been very well cooked and some insulation breakdown had occurred, causing the area around one of the tube pins to disintegrate.



Receiver chassis being stripped down



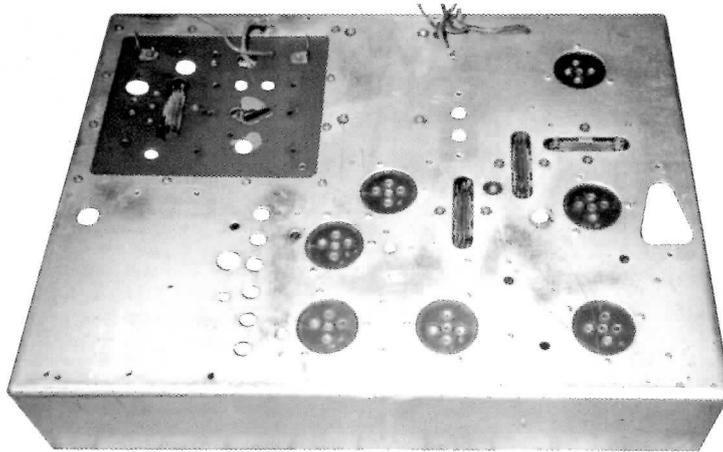
The three chassis being tested on Mike's bench

As this was the 5KV supply pin I was not entirely surprised. This also gave problems with the Tube itself, as the area on the base around this pin was badly damaged.

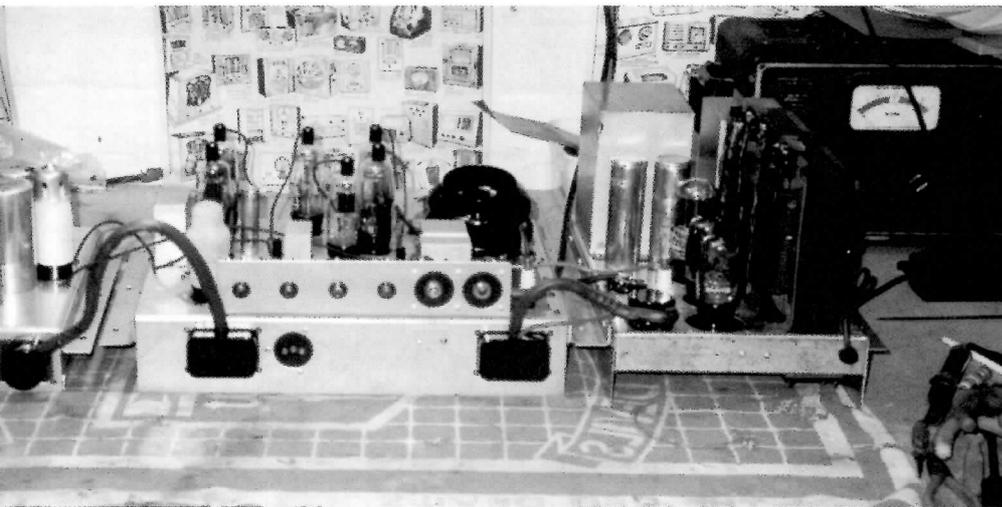
I did manage to get a brand new tube socket, exactly the same type as originally fitted (thanks to Dave again). So that was used and the old one discarded. Other problems showed where the original paper capacitors mounted on the isolated EHT and signal panel had been replaced with others causing damage to the paxolin where it had been drilled badly. After a lot of scrounging I was able to find some old capacitor blocks of the original size, and these were used. The original Westinghouse metal rectifier stick showed little sign of life, so the insides were emptied and replaced with a silicon diode.

All wiring that had suffered was replaced and components checked and replaced or rebuilt. Connections to the tube socket are made in high voltage rubber-covered wire as in the other high voltage areas.

There appeared to be no sign of the original vision coupling condenser C10, and I had to



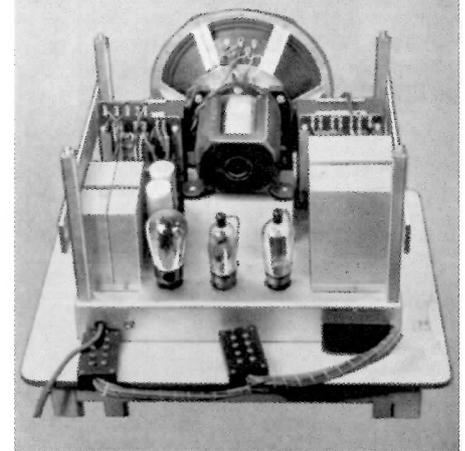
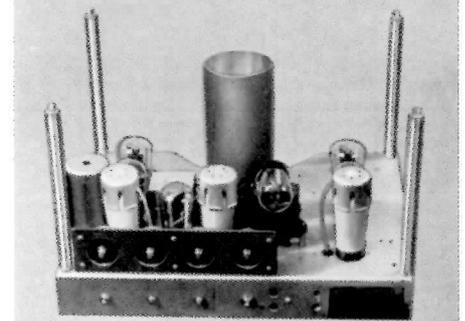
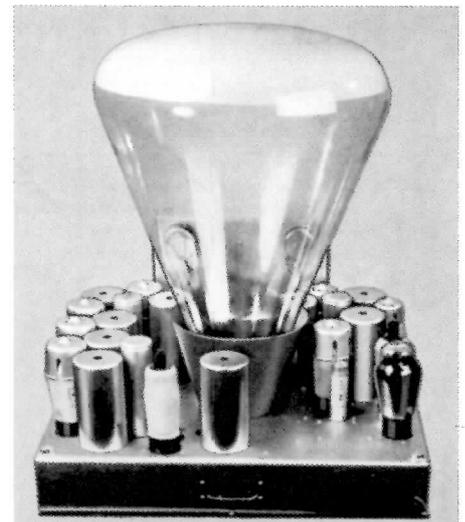
Timebase chassis stripped down



guess at what it would have been like originally, so I used a capacitor case to match another mounted close by and built a pair of high voltage ceramic plate capacitors into it: these have to withstand the whole 5KV. This section of the set took the longest to restore and gave the most headaches when the set was first switched on. The valves for this section also gave rise to some problems. The AC/P4 valves are graded by the manufacturers and the Mazda data books indicate that only certain grades should be used together to give the required amplification. Finding AC/P4 valves was not a problem, but finding enough of them to get four of the same grade needed many phone calls and unnecessary expenditure. Eventually enough were found and after the supply of a brand new T31 (again thanks to Dave) and some D1 valves, that seem to just lie into their sockets without a very secure feeling, this chassis was almost ready to go. Another problem encountered with the timebase chassis was the fact that the focus and grid bias (brightness) pots had suffered and the carbon tracks were almost invisible.

For this I transplanted the carbon tracks from some other Morganite pots as these were originally 5M $\Omega$  this proved very difficult. Eventually I had to be satisfied with tracks from 2M $\Omega$  pots that had gone high with age, each now reading between 3-4M $\Omega$ . This does not seem to have affected the sets performance in any way.

With the three chassis' now restored, there only seemed one item left to complete the units. This was the connecting cables that carry the filament current and the HT supplies etc. These cables were originally special rubber-covered cables with some very heavy duty wire for the filaments and other different rubber-covered wires for the HT and audio. The problem was to make a cable with the required types of wire that looked the same as the original. This was achieved using 4mm house wiring cable for the filament circuits and very thick rubber wire for the remaining 5 cores, all enclosed in two thicknesses of black heat shrink sleeving. Although not perfect, the result does look correct but is not as flexible as the original, and even using the 4mm

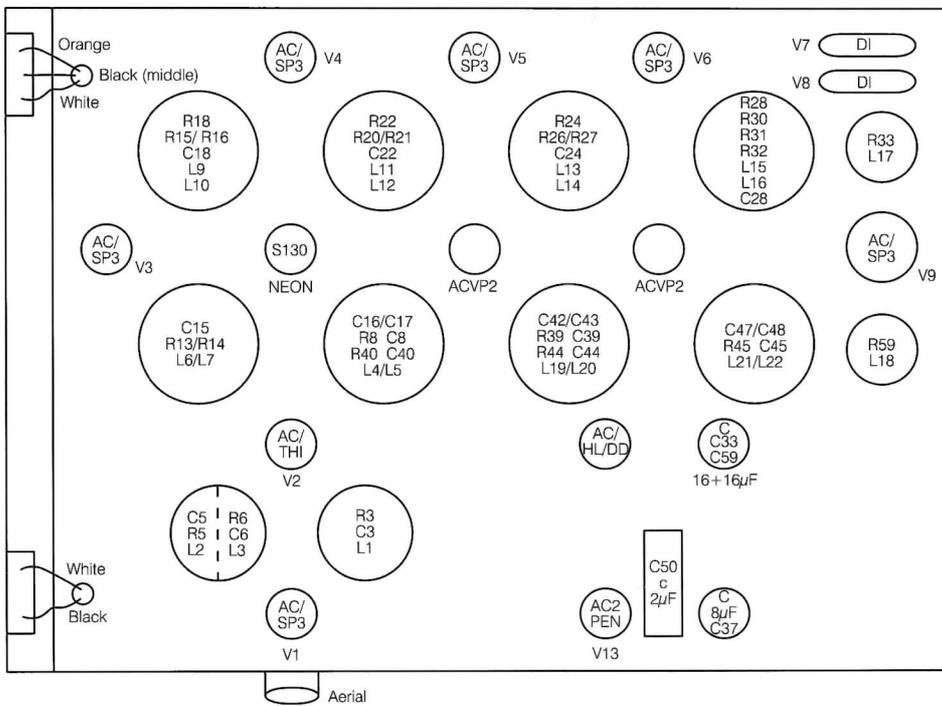


An experimental Murphy Television from 1936

cable, in operation, gets warm.

With the whole lot connected up on the bench, power was applied. After a few seconds there was sound from the speaker, and after just minor tuning adjustment the broadcast came through loud and clear. Then after some voltage checks and other minor tests, it was time to plug in the tube.

With the tube plugged in and suspended in a frame above the chassis and everyone standing in anticipation, the set was switched on. First came the sound, then the mercury vapour rectifiers fired up and 5000 volts was supplied to the tube, but no picture. After a few moments the bias and focus controls were adjusted, still no picture, then a flash of light appeared on the screen and a full picture was visible, but almost as quickly as it came, it went again. After some fault finding and checking tube base connections a picture was finally obtained, but there was still problems. Only two thirds of the screen was covered by the scan: it appeared that there was a frame scan fault, but after extensive fault finding to no avail, it was decided (as the



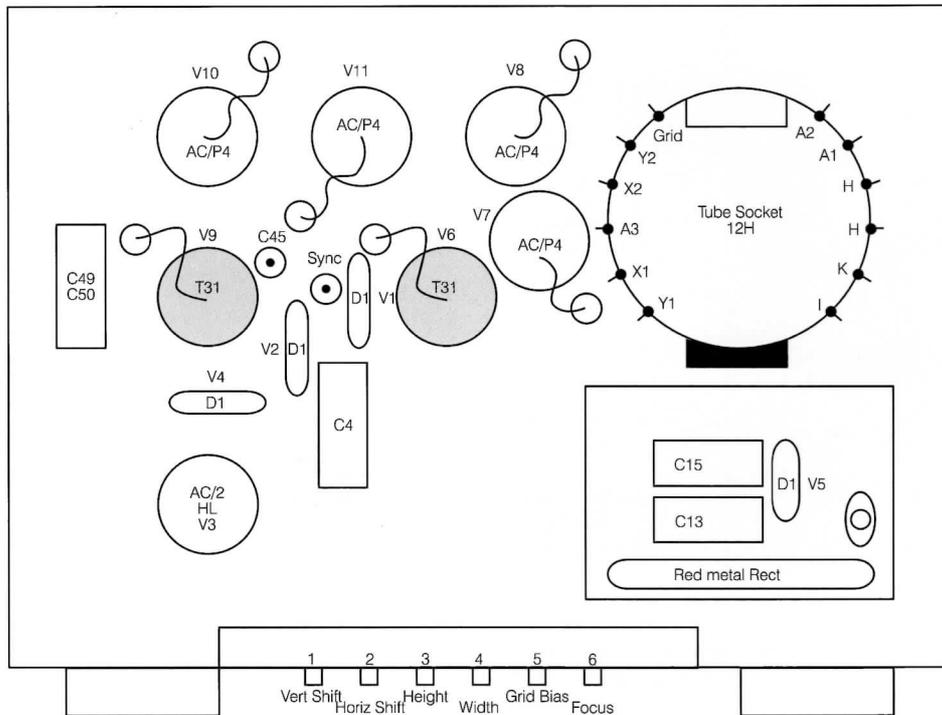
set used a glorified 'scope circuit' that the signals could be fed into the X and Y plate inputs of a scope to see if the problem could be tracked down. Capacitors were changed to increase the scan frequency and the 'scope deployed. To everyone's surprise a full linear picture was obtained on the 'scope screen, so there was no fault in the time bases. This meant there had to be a fault in the tube itself. So now, where do you find a replacement tube like the original 11.5" electrostatic? A tube of some unknown characteristics was sourced and I became the guinea pig for the supplier to find out what the tube would do.

After some playing with voltages and making up an adapter using a step-up transformer to increase the filament voltage from 2 to 4 volts a good picture was obtained. Now what to do about the original soft tube? Well, so far I have not been able to do anything. The tube is made of Pyrex, and no one will touch it. One option is to have a completely new tube built at a cost, and this may yet be done, but for now the set is complete with the original tube just showing part of a picture. The other tube is only being kept to demonstrate a full picture if required.

### The Circuit in detail.

A common aerial circuit for sound and vision is used, the signal amplified before being passed on to a common frequency changer stage at which band-pass filters are used to separate the sound and vision. Sound is then amplified by two intermediate frequency amplifiers, then rectified and amplified once more before signals are passed to the audio output valve. The vision intermediate frequency amplifier has four stages in which very high slope pentodes are used. A pair of separate diodes give full wave rectification of the signal which is passed to the vision output pentode. Direct coupling is used here to preserve the DC component of the signal. The vision signal is taken to the grid of the cathode ray tube from the anode of the output valve. A resistance in the cathode circuit provides volts for the operation of the synchronising circuits. These circuits are designed for complete separation of the picture signals from the synchronising impulses. The line impulses are then passed to the line time-base which they control. The synchronising impulses are also fed to a special frame synchronising circuit which produces a very sharp impulse for controlling the frame time-base, giving steady interlacing.

Each time-base uses one thyatron and two amplifier valves to supply the voltage sweep required at the deflecting plates of the tube. Grid bias for the tube is supplied from a separate unit using a metal rectifier, and the time constants of the grid and anode supply voltages are arranged so that it is impossible for the spot to become stationary at its full intensity either at switch on or off with consequent damage to the tube.



Acknowledgments: My thanks go to the following people for their help, support and lastly just putting up with me!

John Howes, Dave Grant for parts and info, Phillip Taylor and Gerry Horrox for the replacement tube and info, John and Sandra Sprange for workshop space and endless cups of tea, Malcolm and Graham for very late nights over a hot television!



# The Wireless Years of A.J.S.

by Pat Leggatt



In 1876, in Wednesfield near Wolverhampton, Harry Stevens was born, the eldest of five sons of a blacksmith Joseph Stevens. As the years went by, Harry joined his father in the business and showed much talent for engineering innovation. He designed and built small petrol engines and soon had the idea of fitting one to a bicycle frame. Thus in 1901 appeared the first motor cycle of what was to become a famous marque, and in 1909 he and his brothers formed A.J.Stevens & Co. Ltd. The rest of the motor cycle story is well-known to enthusiasts.

Harry Stevens caught the wireless bug quite early on and owned a receiver before the first World War. Surviving a brush with the police in 1914 when he failed to hand in his set at the outbreak of war, he continued his interest afterwards and was one of the many enthusiastic listeners to hear Nellie Melba's broadcast from Chelmsford in 1920.

Urged on by Harry, the family company decided to exploit the commercial opportunities of the 'wireless boom' and entered this field in 1922. Harry designed the sets and the company marketed their first receivers in 1923, aiming at the top of the market with a 4-valve pedestal model in an oak or mahogany cabinet selling at £75, perhaps about £4000 in today's money. The same set in exposed sloping panel or table cabinet versions sold for rather less than half this price, but still a lot.

1924 brought a wider range of products including more modestly priced 2 and 3-valve sets, but all with the same high standards of construction and cabinet work. Expensive 4-valve models in sloping panel, table top or console versions were also still available. This year saw the introduction of the first A.J.S. loudspeaker, a metal-horn instrument which could be had separately as the 'Junior', or in various luxury loudspeaker pedestals, or built in to the top-of-the-range Model F console 4-valve set.

The following year, 1925, the Model F receiver was mounted in a smarter table-top cabinet and marketed as the Model F6. This

is the earliest A.J.S. receiver I own and has one or two interesting features. Internal coils provide medium-wave coverage, while long waves are catered for by an optional plug-in coil holder to carry loading coils. One of these coils is a reaction winding and can be moved into tighter or looser coupling with the other by means of a lever controlling the hinged coil holder: in this long-wave mode, reaction is round the HF stage. When the lever is flat down against the panel, the loading coils are shorted out and medium-wave coverage applies, now with reaction round the detector controlled by a variometer in the internal tuning coil. Removable links provide for connection of a frame aerial; and switching allows for use of two, three or four valves according to available signal strength and required volume. There is also provision for connection of a rejector circuit to cut out an interfering station.

Although A.J.S. secured a patent for a 'Thermionic Valve' in 1926, they did not produce any of their own. A notice plate on my Model F6 states that 'The A.J.S. Mullard valves supplied with this instrument have been designed to give best results with the special circuit'. This parallels the situation which applied to B.S.A. — the other motor cycle company in the wireless business — whose 'B.S.A. Standard' valves were made by STC.

I have another 1925 A.J.S. receiver, the Model Z. This is a simple 2-valve set in a very handsome cabinet with plug-in coils and swinging coil reaction. Costing £13-18-6 it was the least expensive of that year's models, but still over £600 in today's money.

Also in 1925 A.J.S. offered their top quality horn loudspeaker with panelled oak flare. They produced earphones too, and marketed a range of their own components for home constructors.

Moving on to 1926, the A.J.S. 'Symphony' range appeared, including 2, 3 and 5-valve TRF receivers, together with 5 and 7-valve superhets. I have the 'Symphony Portable', a 5-valve TRF two HF-Detector-two LF with separate integral frame aerials for medium

and long wave. The frame aerials constitute the only tuned circuits and are wired in a Hartley configuration with reaction round the HF stage. The second HF stage is untuned, with HF choke/capacitance coupling to the untuned detector.

My other A.J.S. set in this 1926/27 series is the 5-valve 'Symphony Five Superhet'. All the valves are triodes with both the anode bend first detector and separate local oscillator again connected in Hartley configuration: reaction is applied round the HF stage. There follows an aperiodic IF stage working at a frequency of 45kHz feeding an anode bend second detector and then a single LF stage designed for headphone output only. The 7-valve superhets in the 'Symphony' series incorporated further LF amplification for loudspeaker operation. The set was intended for use with a normal long-wire aerial and, with an IF as low as 45kHz, the local oscillator frequency would itself be in the broadcast band and was injected directly into the aerial circuit: the sets must therefore have been liable to cause appreciable local interference.

A.J.S. withdrew from wireless activities in mid-1928, finding it no longer a profitable proposition. It seems to me that Harry Stevens was an excellent designer of the sets which led the field in the 1923/24 period, but was unable to progress to the rather more sophisticated techniques of the later 1920's. In particular the 1927/28 'Symphony' range shows unimaginative design and could have done with a screen grid valve here and there; and by this time many buyers were looking for mains-powered receivers.

The early A.J.S. sets are very attractive, but for such up-market products sales cannot have been all that high and they are not easy to find today. They are very evocative of their period and I count myself lucky to have at least some examples.

Reference  
A.J.S. of Wolverhampton by S.J.Mills. Privately published 1994.



# The Reel Thing

by Tony Voysey

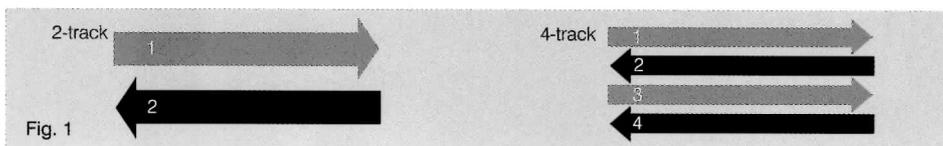


Fig. 1

This is not a treatise on the technical aspects of tape recording or a review of the various manufacturers. It is simply an introduction to a piece of equipment which may not have been considered as part of a collection. I refer to the domestic portable reel-to-reel (or open-reel) tape recorder. This was preceded by wire and metal-tape recorders and succeeded by cartridge players and cassette recorders and is now largely forgotten, apart from the superior version used in studio work.

There were two main types available, the 2-track and the 4-track, together with a variety of tape speeds: one and seven eighths, three and three quarters and seven and a half inches per second. Some machines had all three speeds, some two, some only one (usually three and three quarter i.p.s.). The slowest speed was recommended for speech, the fastest for high-fidelity and the intermediate speed for general music recording. The 4-track system gave twice as much recording time for a given speed, supposedly at the expense of quality but I have never confirmed this audibly. Figure 1 illustrates the conventional numbering of tracks.

The 4-track system was ready-made for the coming of stereo, using tracks 1 and 3 in one direction and tracks 2 and 4 in the other for the two channels. Recordings made on a 2-track machine could also be replayed on a 4-track machine using tracks 1 and 4 but the reverse cannot apply and would produce, for example, a combination of track 1 playing normally and track 2 playing backwards at the same time.

There were also a variety of tapes produced to progressively increase playing time at the expense of tape thickness. These were classed as standard, long, double and triple play. The triple play tapes, being so thin, suffered from stretching and breakage (cf. C120 cassettes). Spool sizes between 3" and 7" were produced giving a great variety of playing times. Many of the domestic recorders could not accommodate 7" spools so, for my own use, I settled on five and three quarter inch spools of double play tape and used the 4-track system played at three and three quarter i.p.s. This gave satisfactory results and good economy. A five and three quarter inch reel of double play tape (1800ft.) gave six hours of recording in total.

Radio transmissions are transient by definition and the tape recorder allowed permanent copies to be made on a very affordable medium. When I obtained my first recorder cassette players were already in vogue, but I never changed over. To this day I use the open-reel variety. When I started, my six hours of recording cost about £1 for the tape and I still have a small stock of unused tapes.

The 'car boot' sale of 10-15 years ago was a good source of machines for £5-£10. I bought several on the basis that breakdowns

could be scrapped and another machine brought into service. In practice repairs were attempted, as interest grew, so I have a number of machines which have hardly been used since acquisition. I see them for sale rarely now, so my stock will have to suffice. Although seldom used to record, these days, I need serviceable machines to replay my collection of tapes.

As with the cassette recorder, to my knowledge to this day, everything is dependent on a rubber drive belt (or belts) and this material perishes with age. I have purchased machines that had been discarded for the want of a belt. These are no longer available and, even if found on a shelf somewhere, would already have suffered ageing. Some years ago I obtained a replacement drive belt from Grundig which was unusable as it was obviously 'new but old stock'. I have had some success (not always permanent) fabricating replacements from rubber cord cut to size and stuck with cyanoacrylate 'super glue' using a mitred joint.

I have found most faults on old machines to be mechanical and these can usually be cured or improved. In 25 years I have had very few electrical faults and these have been fairly straightforward once diagnosed e.g. one valve, one fuse and one loudspeaker replaced on three different machines. Head cleanliness is very important on open-reel equipment. As it runs twice or four times as fast as a cassette recorder there is that same multiple of tape contact over a given time. The tape transport system also requires regular cleaning. I have always used methylated spirit on a felt pad for cleaning. All of my domestic machines have an erase head and a combined record/playback head. More expensive machines had separate record and playback heads.

As an aside, the first recording machine I had as a young man was not a tape recorder but a dictaphone which recorded onto a magnetic paper disc. My children played with this in the 1960's until it broke down, whilst smoking badly. As a smoker myself I could not discipline the machine, so merely scrapped it. I wish I had kept it as I may have been able to repair it now.

In my experience the reproduction of open-reel recorders can be improved simply by utilising an extension speaker, although an external amplifier can be used for even further improvement. A multiplicity of connecting leads may be required with a collection of several machines (DIN, phono, Jack in various combinations) and connection to radios and other tape recorders are often by trial and error in the absence of instruction books. A second machine is very desirable as this allows editing of recordings by transfer. When I obtained my second machine I was very puzzled that I was unable to transfer by connecting the two with a standard 5-pin DIN to 5-pin DIN lead. The reason was that a

November, 1958

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'cross-over' lead is required when connecting two recorders - the connections at one plug must be reversed to give the correct input/output configuration. Where separate input and output sockets are provided (e.g. phono system) connections are simpler. The output on many recorder sockets requires a resistance in series to match the input of a second recorder. On others direct connection is possible. Trial and error again. On one of my recorders - a Marconiphone - the connecting sockets are so unusual that I have never found suitable connectors.

To record sound from television, before the advent of the video recorder, I obtained a commercial unit which connected to the television speaker terminals and contained an isolating transformer. The unit then connected to the recorder input. This worked quite well. Previously I had used a microphone placed in front of the speaker, which worked to some extent, provided silence was maintained in the room. I have one recording where a cigarette lighter, which refused to function, produced a marvellous background noise of 'clicks'.

One unusual machine I will mention was the 'Gramdeck' from the late 1950's. This allowed recording and playback of tapes for minimum outlay, consisting simply of a tape transport system with no motor or amplifier. The drive was obtained by placing the whole unit on the turntable of a 78 rpm. gramophone which gave a tape speed of seven and three quarter i.p.s. the erase head was a permanent magnet, so the tape threading was different for record and replay to avoid the head when playing back. Apart from a transistorised battery-driven control unit, that was it. Of course, an amplifier or radio was required for replay. I have one of these units but really it is only a novelty and far too finicky for routine use - and it still has a drive belt!

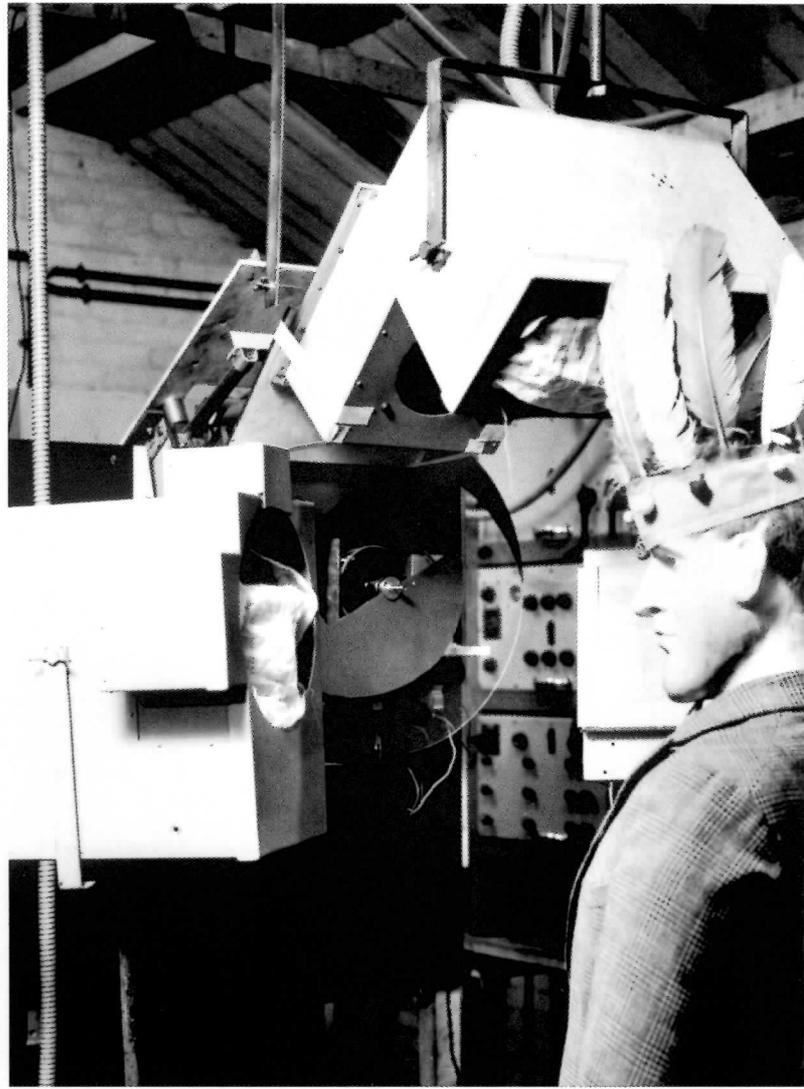
The availability of domestic tape recorders roughly coincided with the advent of the long playing record, although pre-recorded open-reel tapes never really caught on. I read, in a copy of 'Practical Wireless' from the 1950's, that tape would soon produce the demise of the gramophone record. Well, it took another 40 years to accomplish that and, even then, it was not tape in its most user-friendly form (cassette) that did it. It was the Compact Disc.

The domestic open-reel recorder can now be regarded as 'vintage'. They are still available from time to time and are still inexpensive. They can make an interesting restoration project. As with my previous plea for 1950's valve radios, it would be a shame to see them disappear altogether. There is something about handling a reel tape that is not found with a cassette and the occasional tape breakage is much easier to rectify. Tapes are still available but, at about £10 for 1,000 ft, it is worth risking used tapes from the old 'car boot'.

# Baird's Stereoscopic Colour Television in 1941.

Dr R.B.Head  
(Copyright reserved by the author)  
photographs and diagrams kindly supplied by Ray Herbert

Many articles on Baird's work give prominence to the earliest activities while ignoring his outstanding achievements in colour television. In 1941 he became the first person to demonstrate stereoscopic colour television. Even now, after 56 years, this has yet to become a practical reality.



I first heard of this project when I visited Crescent Wood Road to show Mr Baird a new development in projection tube screens. The conversation turned to a scheme of his for transferring a picture on a curved surface to a flat one by means of an array of very thin glass rods. He then invited me to lunch at a nearby hotel, and Mr E.G.O. Anderson drove us down - the three of us talked about stereoscopic colour television. When we were halfway through the soup I suddenly remembered a tube requiring my attention at the laboratory and had to leave in a hurry. "Never mind" he said, "your work comes before everything—come to lunch again next time you are up here."

On a subsequent visit I found that he had constructed the apparatus for a stereoscopic colour TV system of five hundred lines, five times interlaced, with spotlight scanning from a projection tube of the tea-pot type, the beam passing through a rotating colour filter of six segments, a beam splitter, and a shutter that gradually transferred the picture from one eye to the other. (I can remember him on another occasion when he had been calculating the shape of a difficult filter profile saying to me, "Isn't it, nice to do something simple like washing up.")

The colour signals were picked up by three large multiplier photocells with large area photocathodes—unfortunately the blue sensitive cell which had a bismuth/caesium cathode had become too noisy to use and so the demonstration could not go ahead. As he

found difficulty in getting another, I managed to organise one for him, and delivered this wrapped in a thick nest of newspaper in a fish basket. The cell was about ten inches long, and three inches in diameter and had a mesh multiplier at one end.

Anderson tested it and found that both photocathode and multiplier were good and so it was decided to demonstrate to the dailies one day and the weeklies the following day.

This was to be the world's first demonstration of stereoscopic television.

We thought that the reporters would like sandwiches for refreshments so on the first morning I walked from Crescent Wood Road to Westow Hill and back twice on various commissions subsequently realising that I had walked over four miles. However, when the reporters arrived, all they wanted was whisky! As I returned, I met Mr Sidney Moseley who was just leaving, and then the three of us went into the kitchen and had chops and boiled potatoes for lunch, and then prepared for the demonstration.

Anderson started by switching on a large number of racks one by one to avoid blowing the fuses, and then gave the shutter and filter discs a spin because of the low starting torque of the motors. These were four-pole motors, and Baird had filed four slots in each rotor so that they would run as synchronous motors.

The picture was viewed on another tea-pot projection tube with a white screen, the colour and stereoscopic effect being added by similar rotating colour and shutter discs to

those used in transmission.

The test picture was Donald Duck in yellow smoking a red pipe against a blue sky, but what appeared first was a blue Donald Duck smoking a yellow pipe against a red sky, so Anderson had to slip poles on the motor until the sky became blue.

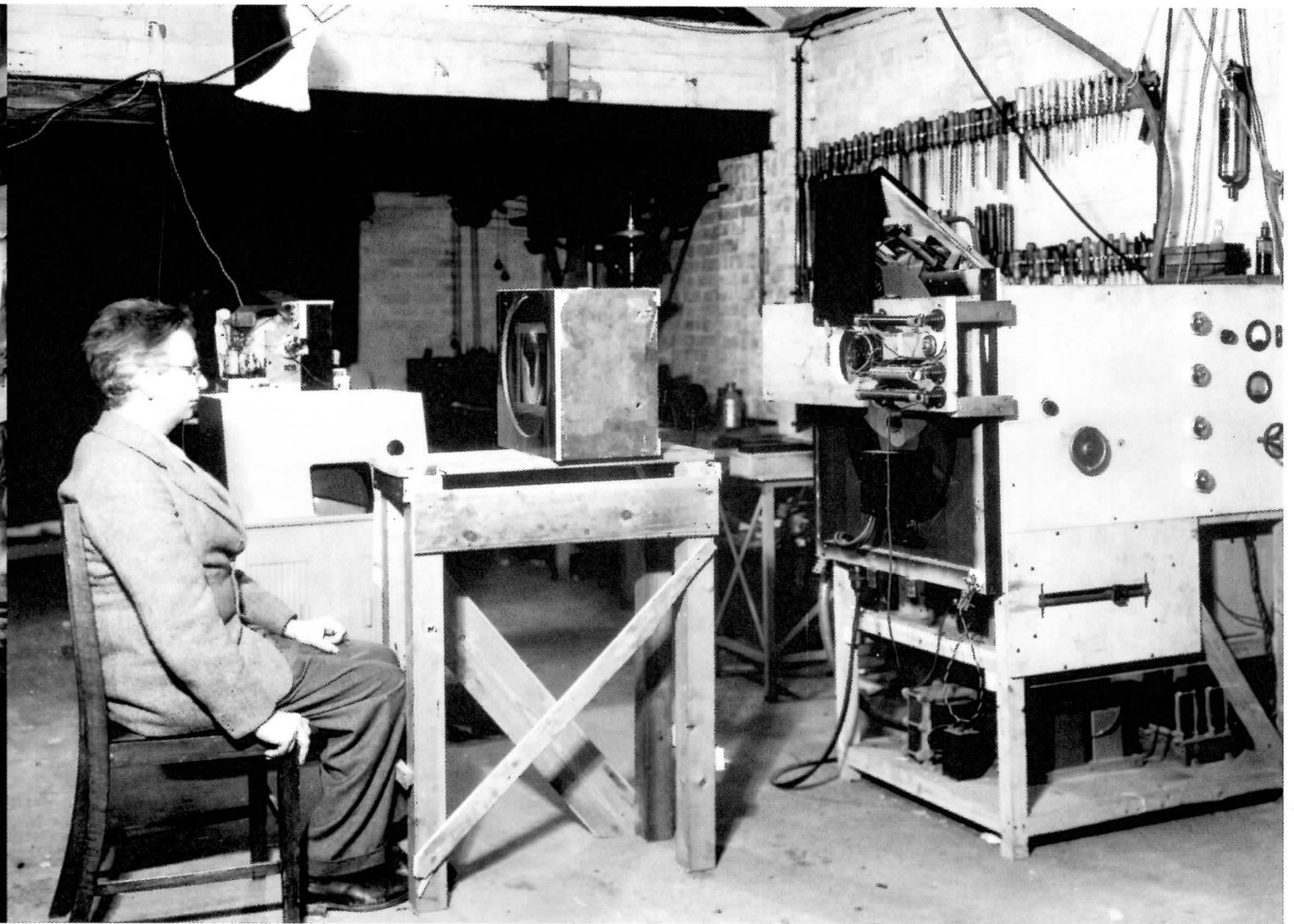
The stereo effect was tested by getting someone to wear a Red Indian head-dress with coloured feathers and poke a long clay pipe at the transmitter.

The viewer saw a good bright colour picture with little noise present, and a very impressive stereo effect.

I gave a small interlude on Mrs Baird's Steinway grand, and the demonstration went ahead. It was very successful. After each show Baird handed round a number of write-ups "That is all you can print", he said, and as the reporters faces fell, "Don't worry, they are all different". He had taken the trouble to type out a number of different accounts himself.

The scanning arrangements are shown in the diagram on page 39, bottom right.

I have given all Baird's letters to me and a number of articles, including one of the first lenses used, to the Crystal Palace Museum which is near the base of the South Tower where he carried out so much work.

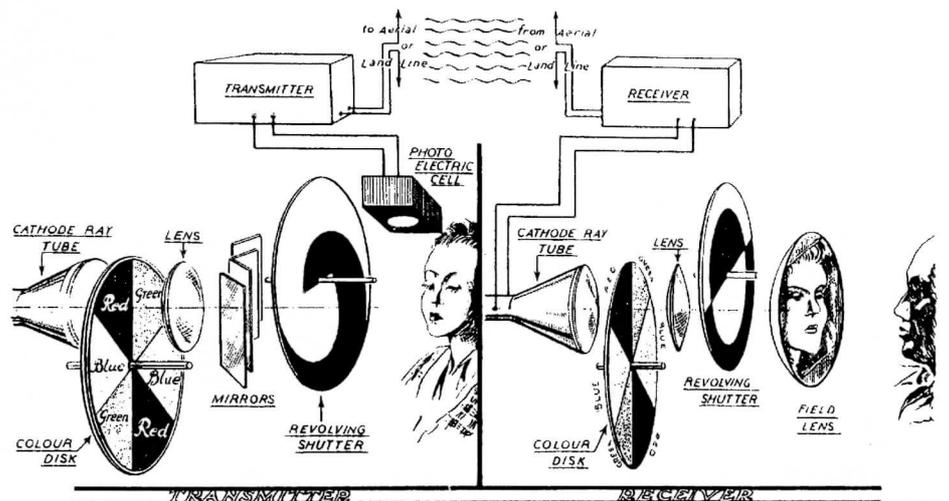
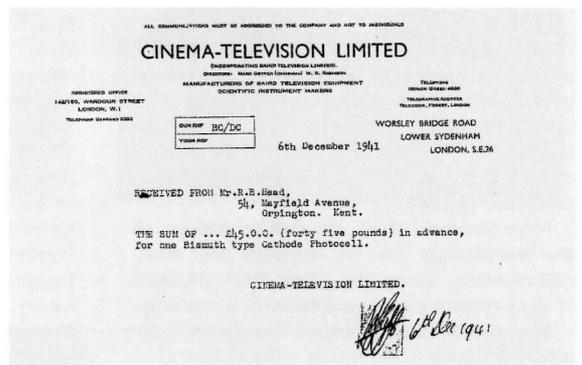


Above left: Eustace, the tailor's dummy, in front of the stereoscopic television scanner. Note the specially shaped shutter for producing left and right eye perspectives alternately.

Above: The stereoscopic colour pictures are projected from the television receiver at right to the image forming lens in front of JL Baird. December 1941.

Right: The bill for the bismuth photocell mentioned in the text. Quite an expensive item representing about 10 weeks wages at that time.

Below right: Diagram illustrating how Baird's stereoscopic system works (from Electronic Engineering, February 1942).



# Letters

Dear Editor,

I found JW Stokes' article on early American tube bases most interesting. As it happens, I have got a list from the ARRL Handbook 1929 showing the UV, UX and UY designations then current, which I now enclose as a matter of interest.

Yours faithfully, Frank Trier

used for other components such as transformers, together with UA (valveholders), UC (condensers), UD (headphones), UP (resistors), UR (valveholders again), and no doubt several others, it really does seem that the RCA identification system is far from convenient or user-friendly. For this reason I consider our erroneous usage of UX4, UX5, UX6, UX7 to be well justified and a credit to British common sense. New Zealand collectors please copy!

May I conclude with best wishes to John Stokes, hoping we're still friends.

Yours sincerely, Pat Leggatt

Tube	Fil. Volts	Fil. Amperes	Plate Volts	Plate Milliamps	Plate Impedance (ohms)	Mutual Conductance (micromhos)	Voltage Amplification Factor *	Output Rating (Watts)	Use
UX-112A	5.0	0.25	90-157	2.5-8	8800-4800	890-1670	3	0.047- .195*	Power Amp.
UX-120	3.0	0.125	135	6.5	6600	500	3.3	.110*	Power Amp.
UX-171-A	5.0	0.25	90-180	10-20	2500-2000	1200-1500	3.0	.130*- .700*	Power Amp.
UX-199	3.0	0.06	45-90	1-2.5	16,500	380	6.25	.007*	Det.-Amp.
UX-201-A	5.0	0.25	45-135	1.5-2.5	11,000	725	8.0	.015*- .055*	Det.-Amp.
UV-203-A	10.0	3.25	1000	125 (osc.)	5000	5000	25	50	Osc.-Amp.
UV-204-A	11.0	3.65	2000	200 (osc.)	5000	5000	25	250	Osc.-Amp.
UV-206	11.0	14.75	10,000-15,000	135	225,000-115,000	300	34.5	1000	Osc.-Amp.
UX-210	6.0-7.5	1.1-1.25	350-425	60 (osc.)	5000	1650	7.7	1.54*-7.5	Osc.-Amp.-Mod.
UX-211	10.0	3.25	1000	125 (osc.)	1900	6300	12	50-100	Osc.-Amp.-Mod.
UX-222	3.3	0.132	135-180	1.5	850,000	350	300	.....	S/G Amp.
UX-224	2.5	1.75	180 max.	4.0	400,000	1050	420	.....	S/G Amp.
UY-227	2.5	1.75	45-180	4.0-6.0	9600	1000	9.0	.164*	Det.-Amp.
UX-240	5.0	0.25	90-180	0.3-2.0	40,000-60,000	500-900	30	.....	Amp.-Det.
UX-245	2.5	1.5	250 max.	32	1900	1850	3.5	1.6*	Pwr. Amp.
UX-260	7.5	1.25	450 max.	55	1800	2100	3.8	4.65*	Amp.-Mod.
UX-841	7.5	1.25	350-425	5-9	23,000	1300	30	7.5	Amp.-Mod.
UX-842	7.5	1.25	350-425	14-28	2500	1200	3	7.5	Amp.-Mod.
UX-845	10.0	3.25	1250 max.	75	2100	2390	5	20-50	Amp.-Mod.
UV-849	11.0	5.0	2000-3000	75-100	3200	6000	19	100*-350	Amp.-Mod.-Osc.
UV-851	11.0	15.5	2000-2500	300	1400	15,000	20	1000	Osc.-Amp.-Mod.
UX-852	10.0	3.25	2000	75 (osc.)	6000-9000	2000-1800	12	75-100	Osc.-Amp.
UV-859	10.0	3.25	2000	70	15000	1500	200	75	S/G Pwr. Amp.
UX-861	11.0	10.0	3000	90-150	133,000	2250	300	500	S/G Pwr. Amp.
UX-865	7.5	2.0	600	21	200,000	750	150	7.5	S/G Amp.
WE-211A (G)	8.7-10	3.4	750	125	4000	.....	.....	50	Amp.-Osc.
WE-211D	10.0	3.0	750-1000	40-85	3500	8000	12	50	Amp.-Osc.
WE-212A (I)	10.75-12	6.25	1600	175	2900	.....	.....	250	Amp.-Osc.
WE-212D	14.0	6.0	1600	100-150	2000	8000	16	250	Amp.-Osc.
WE-215A (N)	0.8-1.1	0.25	20-90	0.2-0.7	35,000-25,000	260-180	6.5	.....	Det.-Amp.
(A-C. r.m.s. per plate.)									
UX-213	5.0	2.0	220	65	.....	.....	.....	.....	Full-Wave Rect.
UX-216B	7.5	1.25	550	65	.....	.....	.....	.....	Half-Wave Rect.
UV-217A	10.0	3.25	1600	200	.....	.....	.....	.....	Half-Wave Rect.
UV-217C	10.0	3.25	3000	150	.....	.....	.....	.....	Half-Wave Rect.
UX-230	5.0	2.0	300	125	.....	.....	.....	.....	Full-Wave Rect.
UX-281	7.5	1.25	700	85	.....	.....	.....	.....	Half-Wave Rect.
UX-866	2.5	5.0	5000 (inverse peak)	600 (peak)	.....	.....	.....	.....	Half-Wave Rect.
UX-872	5.0	10.0	5000 "	2500 (peak)	.....	.....	.....	.....	Half-Wave Rect.
UX-874	Volt. Drop, 90 V. d. c.; Starting Volt., 125 d. c.; Max. Current, 50 mills.								
UV-876	Current rating, 1.7 amps.; voltage drop, 40-60.								
UV-886	Current rating, 2.05 amps.; voltage drop, 40-60.								

Frank Trier's list from the ARRL Handbook

Dear Editor,

I was bitterly offended by John Stokes' attempt to educate us regarding American tube bases - such condescension, and from the Colonies too! (or am I a bit out of date here?). It's all made worse by the fact, to be expected of course from his pen, that he is perfectly right.

Nevertheless I think the British misuse of the terminology can be excused and even commended, since the early RCA product coding system was so confused & confusing.

Even John allows himself to depart from absolute clarity in his article when referring to 'the UV base' as if it defined something unique. Quoting a very authoritative book '70 Years of Radio Tubes and Valves' (author John Stokes) it is noted that "there were no less than six completely different styles and sizes of bases used on tubes bearing the UV prefix": the best known non-standard one is probably the UV199. The '70 Years' book contains a very informative and comprehensive chapter on the development of tube bases of all types.

Turning to the UX prefix, John is of course correct in reminding us that the UX base is strictly-speaking confined to the 4-pin version, with UY defining the 5-pin. But there were also 6-pin, 7-pin and 'small 7-pin' pre-octal bases which appear to have been given no letter coding: I don't know how the Americans refer to them.

Bearing in mind that the UV prefix was also

Dear Editor,

With reference to Barrie Land's letter about Cossor-made Mullard-branded valves, these may well be wartime varieties brought about by directed valve manufacture organised by the Ministry of Supply. Valve manufacturers were organised to maintain a supply of necessary types primarily for the war effort. Domestic types came second. As a result of this, many common types such as screened grids became obsolete and those in small demand never were reintroduced after the war. Equivalent types were bought in and re-branded by one manufacturer from another, the MVSPenB and VP4B being just one example.

Ferranti had at one point stopped making valves and when ordered to start up again, made octal and other 'modern' types only. All pre-war types were dropped and when existing stocks ran out, other maker's equivalent types were bought in and re-marked. Examples of this include AC2PenDD/PT4D, PX4/LP4, ACVPI/VPT4, FC4/VHT4 etc.

Philips started to gain control of Mullard in 1925, and by 1927 had total control. This control was kept as a trade secret, so Stanley Mullard would have had no say in the matter of Cossor valves with Mullard branding. The colour or the metallising on Mullard branded valves did change with time, and the yellowy-gold colour Barrie notes is probably an indication of this. It was common practice to re-spray metallising and this can result in strange appearances which are immediately obvious

to the collector. As an example, Mazda made their VP23 at one stage with green metallising - post-war these appear with the normal slightly coarse grey metallising typical of Mazda but with a ring of green metallising showing top and bottom. It is possible that these variegated valves are Government surplus bought back for domestic sale.

In the immediate post-war period when older radio sets were still being maintained, one manufacturer would supply all others with one type, especially when that one type was not in great demand. Examples include the Cossor 215SG sold as MOV S23, Tungsram SS210, Mullard PMI2M sold as Mazda S215VM, Mullard FC4 sold as MOV MX40 and Ferranti VHT4, MOV PX4 sold as Mullard AC044, Cossor 4XP, Mazda PP3/250 etc. Sometimes the trade went the other way, examples of the power triodes being generally the best known.

Valve production of common domestic types is only worth while in large quantity, 50,000 being a typical minimum batch. It would no doubt take a few hundred before the operatives were skilled enough to turn out a reliable product within specification. Thus manufacturers would keep their mass production lines busy with valves in current demand for set makers and quantity buyers such as large wholesalers and industrial customers. Valves in lesser demand would be bought in from other makers both in Britain and abroad, and production of any one older type would wait until there was sufficient demand and production line availability.

In the 1930s, Mullard sourced many of their valves in Holland and Philips factories in other countries. Many valves were bought in needing evacuation and capping only, Mullard not having very large scale production facilities until the start of the second world war.

As time went by and the demand for valves slowly fell off with the rise of the transistor, many more valves were sourced abroad. When Thorn took over the Mazda and Brimar brands, huge numbers of valves were sourced in Eastern Europe and Russia. Philips concentrated valve production in Holland and France for many domestic types, with Austria as a source for special quality valves.

With the general run down of the valve industry in the western world in the 1980s, remaining valve production was concentrated in eastern Europe, Russia and China. Valve manufacturers such as MOV (GEC) and Western Electric sold both manufacturing plant and designs to China, and the Russians took on American types to satisfy world demand. Power valves are still made by the English Electric Valve Company at Chelmsford, and some power valves are still made in the U.S.A. Western Electric have resumed production of their 300B triode in Kansas, and new types are being introduced by Vaic and Tesla in eastern Europe, and EI in Yugoslavia. There are rumours of new valves being made in the U.S.A. for audio amplifiers.

Yours faithfully, Phil Taylor

Dear Editor,

Your correspondents perhaps might not write so encouragingly about the production of facsimile, or the revitalisation of tired 'magic' eye tubes after indulging in any practical vacuum electronics. Speaking only as one for whom vacuum equipment starts to leak immediately I enter the room, I feel such work is strictly for that elusive 'somebody else' to tackle.

However there is a slender lifeline for those tired 'eyes' still having useful cathode emission. Both Geoff Dixon-Nuttall and I have written about pushing up the target voltage to give more kinetic energy to what electrons there may still be. Try the rectifier cathode for, if you are lucky, 350 volts; or install a discreet voltage multiplier rectifier from decent modern silicon rectifiers and capacitors, to double or even triple up to whatever voltage you dare.

I have tested the target of an old EM34 beneficially up to at least 750 volts; but I think insulation might last better at a more modest 450 volts. For various reasons, it might be a good idea then to drop the heater current a little with a few ohms of series resistor. And of course it would make sense to fit a quality valveholder (and a fuse) to replace whatever fouled component the set-maker provided.

Miniature eyes can get remarkably hot, which is not necessarily very good for windows and scales in proximity. Since at least some of these eyes have a very bright fluorescence anyway, dropping the heater current could well be a help.

Yours faithfully, Desmond Thackeray

Dear Editor,

Harold Page's article on the Sound Sales receiver reminds me that I recently met another of these sets. This one had the same chassis, but was apparently intended for use in schools, as it had no speaker and a black metal cabinet. The output transformer was tapped for a choice of speakers. The selectivity arrangements were as he describes, but I wondered why the first IF transformer was damped by 100k. Removing this resulted in instability, and this was traced to the KTW63 IF stage, which was without the usual can or metallising. Replacing this by a 6K7, which has an internal screen, improved things no end. While testing this set I discovered incidentally that the case and chassis were 'live' to mains. This was due to carelessness in assembling the mains transformer. Luckily it seems to have had no ill effects, such as death of a teacher.

Sound Sales made all their own transformers, and before the war Roberts Radio used to buy audio coupling transformers from them. At least these couldn't kill anybody!

Yours sincerely, Geoffrey Dixon-Nuttall

### Aerial navigation by Wireless in the 1920's

Dear Editor

This topic came to mind when I saw a relevant film at the national Film Theatre in the South Bank complex in central London\*. It was one of many dealing with aviation in the 1920's, most of which had not been seen since they were made between 1925 & 1929.

One of the attractions of this presentation was that there were several films dealing with airships. We tend to forget that the first fare-paying transatlantic air service was not by heavier-than-air craft, but by airships. The *Graf Zeppelin* maintained a transatlantic air service for a decade 1929-1939 and did not crash. This wonderful craft survived until 1939 and was in fact broken up in 1940.

The films shown at the NFT included that showing the journey of the *Graf Zeppelin* to the Arctic in July 1931, with the aim of charting various islands in Franz Josef Land. At that time the extent of the Arctic ice cap was unknown and it was difficult to distinguish land from ice except by an aerial survey, which was ideally done with an airship.

This journey from Germany to Franz Josef Land, followed by a very brief rendezvous with a Russian icebreaker with the famous arctic explorer Nobile on board, was an epic voyage lasting seven days and covering a distance of more than 8,000 miles. In the film record made by newsreel camera-men on the airship\*\* most of the shots were taken either looking out of the airship at the scenes below, or of the ship itself from the ground. However there were some shots of the interior and showed the navigators plotting their course, a wall clock in their quarters and some various items of wireless equipment.

For the *Graf Zeppelin* to fly the Atlantic for a decade without mishap must have meant that they had the very latest navigational aids, and doubtless the latest wireless equipment.

I enquired in the NFT bookshop whether there were any books on aerial wireless in the 1920's, but there were not. I assume that much is written about the wireless equipment used in conventional aircraft, but what is known of the equipment in airships? Who made it? What was the state of aerial navigation with airships at the time? Also as the *Graf Zeppelin* never crashed, was the wireless equipment saved when it was scrapped?

If all this is too much to ask, then what happened to the equipment on the British airship *R100*? The *R101* crashed outside Beauvais, seemingly because political pressures forced a premature start to its maiden voyage, under deteriorating weather conditions. Because of this disaster the *R100* was never allowed to fly again, but was sold for £450 in 1931 and broken up. What happened to the wireless equipment?

I hope that some BVWS members may be able to answer these questions; it is a fascinating subject.

\* 'Aviation in the 1920's', National Film Theatre, 14 May 1997, Museum Cinema, introduced by John Huntley. (May 1997 programme booklet, pages 49 & 56).

\*\* An account of this air voyage is given in the book 'Hindenberg' by Rick Archbold, 1994, published by Warner/Madison Press, New York, pages 74/78 & 120/122. The figure on page 122, top right is a picture taken on the airship during the voyage of one of the newsreel photographers involved in the making of the film shown at the NFT.

David J Boullin (Editor: Radio Time)

### A plea for help

Dear Editor

I am a recent radio collector of about a year and although I can do wonders with the electronic part of most radios, I am at a loss when it comes to cabinet refinishing. I recently stripped a cabinet and then revarnished it, I was woken up the following morning by my father who had gone into the garage and discovered my 'effort' on the bench. He had never laughed so much before (apart from when he watches Norman Wisdom films).

The varnish had dried unevenly and looked awful. I would be pleased if any readers could offer me advice on the above problem and how to do a first class job.

Yours sincerely, Michael Gohl  
(supposed wireless restorer) 01482 654053

### Re Electronic TV 1936-50

In response to the letter from member R. Howells and your own comments, here are a few observations from one 'who was around at the time'. Transmissions of the 30-line system took place at the height of the wireless

boom and home construction television kits fitted in well with the times. An electricity supply was needed for the motor, although at this time less than half the population of the UK had their homes wired up. There were numerous articles in the constructor magazines and many of the machines were built but the novelty soon wore off; many of the machines ended up in the loft or cellar. For this reason I think that there is still quite an amount of memorabilia surviving.

I can recall seeing a demonstration by Baird during my school days. A friend and I dabbled about with a machine built by my friend's father. I was into building and repairing radios from about the age of thirteen and obtained employment in the electrical industry with 'the wireless' as a sideline. I was living in South-West London during this time- the 30-line system passed into history and soon it was 1936 and the new high definition system by EMI. The technical performance of this was brilliant, but there were other factors working against it. These were rapidly changing times. The Lissen and Telsen kits had gone; A Philco 5 valve superhet could be had for around £5 at the cut price stores. Many in the highly populated areas of London had switched to broadcast relay. The cinema was at its peak, and a new Ford car could be purchased for £100 which was less than half the price of the early EMI system sets- it could be seen that the sales potential was low for a device that was little understood by the general public and could only be received in a limited area of London and the suburbs, providing one had their own AC mains supply, this being an age of AC/DC and any voltage between 110 - 250 volts! I recall a set in the late forties activated by a large rotary converter housed under a grand piano.

For myself, there seemed no possibility of anyone I knew or was likely to know buying one; in addition, being a child of the electro-mechanical age I found the idea of these cathode ray tubes rather hard to grasp- a bit science fiction-and like the neutrodyne unlikely to last. I decided to pin my hopes on the other runner in the market, which was the Scophony system. It was reported to have produced good results in a London cinema and a domestic model was said to be ready for production.

1939 arrived and in the Spring my policy of 'ignore it and it will go away' was swiftly shattered. A colleague for whom I had built and repaired radios, casually mentioned that he had come into some money and that he had purchased a television from a discount source, and could I set it up for him!

A frenzied search for info, revealed details of a dipole, which was cobbled up with copper rods and twisted flex feeder. The set arrived by horse and cart and turned out to be a 12" GEC console; it had obviously been in stock a while, as there was a Baird-EMI system switch. The weight was incredible and the rear possessed a variety of controls with unfamiliar names. However with the aid of the manual it performed very well and a packed room watched 'Me and My Girl' in May of that year. Within a few months it all ended with the long years of the war.

The GEC survived the war and was sold by its owner still working, and had only needed a couple of valves replacing. After the war I had decided that the CRT was here to stay and I never did see Scophony in action. There were suddenly lots of pre-war sets around: HMV, Invicta, Truphonic and Ekco. There were also 'green tube jobs' from army surplus



### Horn types

Loudspeakers in the early 1920's consisted simply of a drive unit similar to a headphone earpiece with a horn mounted on top. The drive units were of the 'moving iron' type with an iron diaphragm under tension in the magnetic field of a permanent magnet. The magnet field is modified by the field from a 'speech coil' wound round the magnet pole pieces, the coil being fed with the audio signal. When the signal current in the speech coil produces a magnetic field in the same direction as that from the permanent magnet, the diaphragm is attracted more strongly and moves a little closer to the magnet pole pieces. On the other half-cycle of the audio signal, the speech coil field opposes the magnet and the diaphragm springs a little away from the pole pieces. So the diaphragm vibrates in and out with the audio signal and produces sound waves in the air: the horn has the effect of magnifying the sound just as a megaphone does. The iron diaphragm is held just clear of the magnet pole pieces, with a screw adjustment to set the clearance for maximum sensitivity.

### Cone types

In a slightly later development, the iron diaphragm was replaced by a small iron reed: this worked on the same principle as the iron diaphragm type, but avoided some of the objectionable acoustic resonances of the diaphragm which acted like a child's 'tin drum'. The reed, vibrating in accord with the audio signal, was attached to a small non-resonant aluminium cone with a loudspeaker horn on top; or to a larger paper cone in the cone loudspeakers. One of the best cone loudspeakers was the Sterling 'Primax', using a pleated cone (actually flat rather than conical) originally developed in 1906 by Lumière in France for gramophone use.

The speech coils of horn and cone loudspeakers were wound to resistances between a few hundred ohms and about 2000

ohms, suitable for direct connection to receiver output valves.

### Moving coil types

Judged by modern standards, the early horn and cone loudspeakers were far from ideal in many respects, despite advertising blurb describing them as 'The Very Soul of Music'! They all suffered undesirable resonances to some degree; all lacked bass response; they gave rise to appreciable distortion; and they could not handle very much power. Fortunately a major step forward came with the introduction of the moving coil loudspeaker, the type universally used up to the present day.

In a moving coil loudspeaker there is no moving iron diaphragm or reed; rather it is the speech coil which moves. A circular magnet is formed with a central circular pole piece. A paper cone is attached at its rim to the loudspeaker framework by a ring of flexible material, with a small cylindrical speech coil attached to the apex of the cone. The speech coil is fitted round, but not touching, the central pole piece; and the coil and attached cone are thus free to move in and out. Audio signal currents in the speech coil create a magnetic field which interacts with the field of the magnet, causing the coil and cone to vibrate in and out in accordance with the audio signal, and creating sound waves in the air. In larger moving coil loudspeakers, the speech coil can move a comparatively large distance, perhaps half an inch, and the device can handle considerable power.

### Loudspeaker magnets

Moving coil loudspeakers appeared in the UK about 1926, but suffered from the non-availability at that time of suitably small but powerful permanent magnets. An electromagnet or 'field coil' had to be used, energised from a 6 volt accumulator or from a separate mains rectifier power unit — an expensive, bulky and inconvenient arrangement. But with

the advent of mains sets at the end of the 1920's, the field coil could be energised from the receiver power supply, usually in series with the HT line where it performed extra duty as a smoothing choke.

By the mid-1930's suitable permanent magnets became available, and the moving coil loudspeaker therefore became a much more convenient component, entirely displacing the cone types.

The speech coil consists of only a few turns with a low impedance between 3 and 8 ohms. This requires an output transformer to match it to an output valve, as described in the previous article, although transistor output stages are of much lower impedance than valves and need no transformer.

### Loudspeaker baffles

If a loudspeaker cone moves inwards during a signal cycle, pressure of air in front of the cone is reduced and pressure behind is increased. If no precautions are taken, the air under pressure behind the cone will rush round to the front and partially neutralise the required low pressure there. The air will take a little time to move round to the front, so the effect is hardly noticeable on high treble signals but severely reduces low-frequency bass notes where more time is available for air movement during a cycle.

The remedy lies in mounting the loudspeaker on a 'baffle board', with an aperture positioned in front of the cone. The board is perhaps a couple of feet wide and provides a much longer path over which air has to move from the back to the front of the cone. Even on low frequencies, the air does not have time to get round to neutralise the reduced pressure in front, so the bass response is much improved. Rather than use a large board, air movement can be baffled by closing the back of the loudspeaker cabinet, provided that suitable cabinet design avoids 'boomy' resonances.

### Woofers and tweeters

Hi-fi enthusiasts will probably be aware that loudspeakers which adequately handle high-power bass notes have fairly massive cones which are not very suitable for the higher treble frequencies. Accordingly it is now common practice for a large bass 'woofer' to be accompanied by a small treble 'tweeter' loudspeaker in the same cabinet, or even a small tweeter cone attached to the same speech coil as the woofer cone.

letters continued from page 40

equipment. I consider the Ekco to be the best pre-war set; it was well made, good to service and reliable. I even sold one to my next-door neighbour at the time: it was a 7" table model and it worked for many years. I hear that few of the early models have survived but I trust this snapshot of life from one born in 1915 may be of interest to those of you who arrived on the planet a little later.

Yours sincerely, George Mechan

Dear Editor,

At the end of his lively article on wireless sets for timekeeping. Dr Boullin asks if there are any other early sets with a 'horological link': well there are a few that he doesn't mention, some of which were covered recently in David Read's article in Bulletin 21/2 which I hope he

will forgive me for repeating.

Station FL in the Eiffel Tower started time signal transmissions in June 1910 on 2600 metres. It is interesting to note that some time after the start, the Eiffel Tower signals were derived from a Paris Observatory clock pendulum swinging 50 times every 49 seconds, thus giving a very accurate acoustic vernier indication when the pendulum and seconds beats coincided. There were also time signals on 3900 metres from Station POZ at Nauen in Germany

These time transmissions of course prompted some wireless manufacturers to market receivers for time signals, the earliest of which was Marconi's who in 1910 offered the 'Portable Magnetic Detector for Time Signals and Weather Reports': the receiver was 'portable'—i.e. self-contained—in that it

incorporated a tapped aerial tuning inductance and variable condenser, unlike the basic 'Maggie' for which a separate tuner was needed. In the same year Marconi's marketed the 'Crystal Receiver No.1 for Reception of News, Time Signals and Weather Reports' with the Eiffel Tower identified on the tuning chart. A No.2 version for time signals was not self-contained, needing a separate tuner. These Marconi products were aimed primarily at marine navigational use, but I suppose correction of ships' chronometers counts as catering for the horological trade.

Next to appear, in 1912 a year before the Horophone, seems to have been BTH's crystal set for time signals, designed by R.C.Clinker which was indeed aimed at clock and watch makers. After the War, in 1920, Clinker produced a 2-valve portable set with

# Sinclair Micro-Radios mini-history

by Enrico Tedeschi, photography also by Enrico

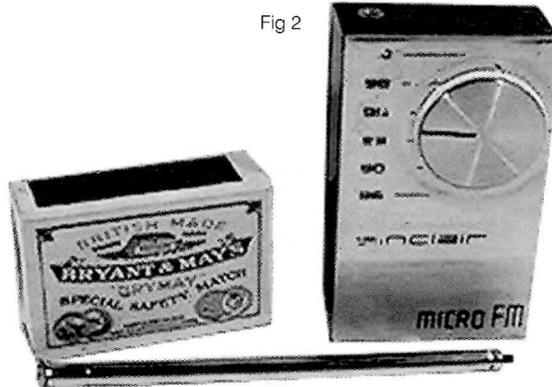
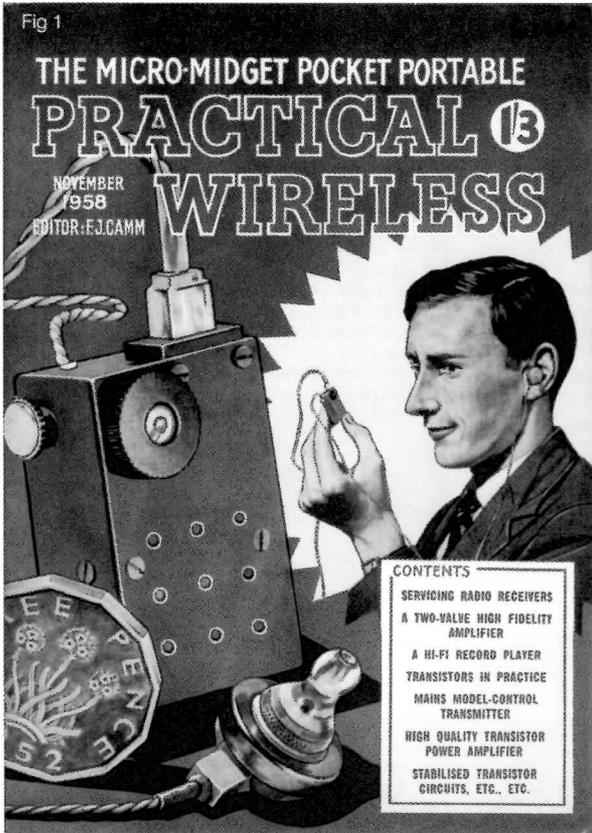


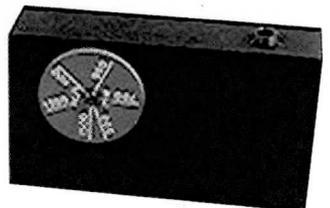
Fig 1: The very first public appearance of Sir Clive using the 'micro-midget portable'; already demonstrating his obsession with miniaturisation

Fig 2: The Sinclair 'Micro FM'

Fig 3: The 'Sinclair Micromatic'

Fig 4: The 'Sinclair Micro 6'

Fig 5: The Sinclair 'Slimline'



Sinclair products enjoy a collectable status mainly because they have often been at the forefront of technological advance. Unfortunately, in the case of radios, Sinclair was slow and late (the Regency TR-1, the first transistor radio was put on sale in the USA in November 1954). However the collectability of Sinclair radios is assured by the fame of their British electronics wizard: Sir Clive Sinclair.

## The Slimline

The first of the Sinclair micro radios came out in early 1963 and was called the Slimline. It used the now famous Micro-alloy transistors which Sinclair was buying cheaply as rejects and badging them with his own model number after checking and testing them in a small room in a building just off Chancery Lane, London.

The Slimline micro-radio was supplied only as a kit and, as later became common in Sinclair's micro radios ad blurb, it claimed to give you 'Europe in the palm of your hand' while using its 'featherweight quality earpiece'.

At the time many listeners were keen to tune into the very popular continental pop music station Radio Luxembourg and so Sinclair ads suggesting that, with 49 shillings and 6 pence you could own your own piece of advanced (!?) electronics able to pull this station in, were really tempting for the penny-watching radio buffs.

## The Micro 6

But Sinclair, who had always been fascinated

by diminutive items, pressed on for miniaturisation and in early 1964 came out with 'the smallest set in the world': the MICRO-6.

While this claim might not be completely true (The Japanese Micronic Ruby was a comparable sized set but a real superheterodyne radio receiver with a loudspeaker) the set was really tiny and used the usual MAT transistors to give a 'six stage sensitivity'. What was really happening inside was that, with only three transistors, two stages in High Frequency were followed by three stages in A.F. after detection.

The ad. blurb stated that the set really 'played in car, train, bus or plane' as a reassurance for anybody who could have feared the contrary. It was still an earphone-only radio but it sported its own 'self-contained ferrite rod aerial and batteries'

## The Micro FM

The third model, which came out in late 1965, was the MICRO FM, a fully fledged 7 transistor (and two diodes!) superhet circuit 'incorporating many unique and original design features to achieve a fantastically good standard of performance'

This one too was still supplied only as a kit and therefore appealed only to the home electronic tinkerer of the time.

## The Micromatic

The last, and most popular of Sinclair's micro-radios, was produced in 1967. To keep the cost low the number of transistors was reduced to only two while still boasting a 'six stage amplification'.

The usual claim to be 'the smallest set in the world' was achieved (if at all) by the use of a small compensator instead of a fully fledged variable capacitor, just like the other Sinclair sets in their time.

This time, perhaps in the effort to appeal to the more general public, the set was also supplied already built. While still an earphone receiver, the advertising pictures showed a series of small holes underneath and below the tuning dial, perhaps trying to hint that it contained a loudspeaker which of course it didn't.

At least two versions are known to exist and they can be distinguished by where the earphone socket is placed (one on the opposite side to the other).

## Conclusion

Sinclair's micro radios did not shake the world when they came out but they are worth putting by for their historical and nostalgic importance.

## Bibliography

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The Sinclair Story by Rodney Dale, Duckworth publishers (1985)  
Sinclair Archeology by Enrico Tedeschi, published by Hove Books/Brighton, 1996  
- House leaflets and brochures

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# BVWS Minutes

Minutes of the BVWS Annual General Meeting held at the Harpenden Halls on 2nd March 1997

**1 Apologies for absence** None received.

**2 Minutes of last meeting** No amendments received - but not agreed as correct.

**3 Chairman's Statement** Willem reported on the general improvements on the publication side of things, and thanked Gordon Bussey for arranging the Christmas cards which were well received by the membership as was the Marconi catalogue reprint. Willem then briefly spoke about the proposed GEC-Marconi auction and reported that the plans for the sale had been shelved and thanked all of the members who had written to the papers etc. Willem then spoke about the BVWS commemorative event and thanked Ken Tythacott on behalf of the Committee and Society for coordinating the arrangements and for organising the Society's events. Willem went on to cover the Constitution issues and postal questionnaire on the membership list, and thanked the membership for returning the forms. Willem concluded by thanking all officers and members on the Committee for all the work put in to the Society over the last year.

**4 Treasurer's report** David Read reported an interim account to the membership. The final accounts will be published in the Summer Bulletin. David noted that there had been an increase in revenue with £20,800 held in Society coffers compared with £18,000 for the same period in the previous financial year. Although there had been higher than usual expenses with respect to the Commemorative Event and the publication of the Marconi catalogue, David did not envisage any financial problems at present. The Bulletin will be kept as it is although there has been an increase in the overall cost; due to the increase in the number of pages.

**5 Events Organiser's report** Ken Tythacott asked members for feedback on the Commemorative Event and noted that there had been an overall improvement in the catering at the Harpenden Halls. The souvenir guide should be ready in the next few months. Ken concluded his report by thanking the regional events organisers for the co-ordination of their own events over the past year. Special thanks go to Andy Emmerson for organising the 405 line television display at the commemorative event, to David Grant and Mike Izzy for providing standards conversion, to all the contributors who loaned items for display at the event and to all of the 100 or so volunteers who gave their time to help over the whole weekend of the event.

**6 Bulletin Editor's report** Carl Glover reported that the next Bulletin was imminent and went on to thank the members for their advice and articles submitted for publication during the year.

**7 Membership Secretary's report** Mike Barker reported that the membership had increased considerably over the past year and had stood at 1228 before renewals. The current number now stands at 1028 members, 43 Complimentary members ie: other Societies, museums, institutions and 7 Honourary members: 211 members had not so far renewed for this year. Mike then went on to report that the family membership and three year membership options were now in place and that, to date, only 143 had opted for the 3 year subscription at the current rate. It was also reported that there may possibly be an increase in the subscription rate over the next two years.

**8 Report on Postal Ballot on the New Constitution** Guy Peskett reported that the new constitution was now in place.

**9 Report on Postal Ballot on Membership List** Guy Peskett noted that the membership List arrangements were now approved.

**10 Announcement of new Committee by Scrutineers.** This was conducted by Gordon Bussey and Tom Going. Tom announced the result for the post of Chairman was: Willem Hackmann - 222, Pat Leggett - 171, Ken Tythacott - 72. 470 voting papers were returned - 465 of those were valid - 4 were returned with no signature and one was received with with no ballot paper within the envelope. The membership present were asked if it would be acceptable to dispose of the voting papers within 28 days. No objections were received, and the proposal was carried.

**11 Any other business** Rod Burman proposed a vote of thanks from the membership to the Committee for the work put in over the last year. The proposal was warmly acknowledged by the membership present.

Pat Leggett is now a full member on the Committee. Pam Zimmer is to be Events Coordinator

Enrico Tedeschi asked about the proposed BVWS web site. Willem reported that the Committee were looking into the possibility, and that no final decision on this matter has yet been taken.

As there was no further business, the meeting was concluded. The next Committee meeting will be advised by Willem Hackmann in due course.

**Minutes of the Committee meeting on April 15th 1997 at 23 Rosendale Road**

**1 Those Present** Willem Hackmann (Chairman), Carl Glover, Ian Higginbottom, Pam Zimmer, Terry Martini, Guy Peskett, Pat Leggett. (David Read chaired the first part of the meeting in the initial absence of Willem Hackmann caught in a traffic jam.)

**2 Apologies for Absence** Mike Barker (unwell, but consulted by telephone during the meeting)

**3 Minutes of the Meeting on February 11th 1997** Terry Martini noted that these minutes had not been agreed as correct at the AGM. The Chairman now agreed them. Pat Leggett noted a number of errors, mainly typographical, on the minutes of the AGM. David Read said that these are corrected by the Bulletin Editor before they are published. Pam Zimmer suggested the use of a tape recorder to make minute-taking easier, but Terry did not feel this was necessary

**4 New members** Mike Barker was unable to present this item. Carl Glover will speak to Mike with regard to possibly 'phoning around'.

**5 Membership Secretary's Report** Carl Glover presented this report on behalf of Mike Barker saying that there are currently 1062 members, 151 have taken the 3 year option, 160 or so have not renewed and there are 14 prospective new members awaiting approval.

**6 Membership List** It was reported that the database has not as yet been updated with the 'Membership Interest'. An extra 'field' will have to be added for this information.

**7 Progress Report on BVWS on the Internet** David Read outlined the progress made so far for the benefit of our two new Committee members. Guy Peskett reported that there had been further problems with the University network telephone lines being down, and is now going back to look at other possible areas for the Society's 'Web Pages'.

**9 Bulletin Editor's Report** Carl Glover reported that publication was due within the next two weeks. A good mix of articles was promised including a comprehensive article on Zenith and the Transoceanic series of radios. A draft copy was passed to the Committee for perusal.

**9 Events Co-ordinator's Report** Pam Zimmer reported that she will be liaising with Ken Tythacott. Similarly, Ian Gurton will be liaising with Pam with respect to the Harpenden events. There were concerns raised over possible clashes with other events: Pam is keen to ensure that this will not happen, and will liaise with the other Events Organisers where appropriate. The Chairman suggested keeping an up-to-date list of events (the Society's and others), to avoid clashes. David Read raised the issue of events in 1998/99: these dates to be looked at. Pat Leggett asked if the Liability Insurance varied if the event was a 'Members Only' one.

**10 Means to Assist Membership Secretary** The Chairman said that we needed to look at reducing the work-load Mike Barker currently has to deal with. Pat Leggett raised the issue of franking envelopes for Bulletin mailings. This he noted could not apply to overseas members' mailings which number about 200, but suggested that franking could usefully be for UK members only: Mike Barker would then only need to supply the mailing labels. Bulletin back issues will now be dealt with by the Chairman.

**11 Preliminary Discussion of Rules for Conduct of Meetings** Pam Zimmer presented this item, and reported on members dealing before the doors had opened. She felt a warning should be given, and should this be ignored, then refusal of a table. A warning could also be given by the Committee. The Chairman suggested that we could publish or post up the rules at the event. Guy Peskett suggested that we restrict the setting-up time to 20 minutes before the doors open. The Chairman asked Pam to produce a discussion document for the next meeting which could possibly then be made ready in time for Autumn.

**12 Start-of-Year Timetable** The Committee discussed the tabled paper. Pat Leggett was concerned at the possible extra costs involved in a January 1st mailing, which could be as much as £300. The Chairman suggested that we raise this issue with Mike Barker. David proposed that the next audited account be ready for March 1st. The Committee accepted the main principles of the paper, and Mike will also be consulted.

**13 Any Other Business: Constitution** Pam Zimmer commented on the 'Winding Up' clause in the Constitution, and suggested that any moneys left over could be donated to a charitable cause.

**Reprint Article** Pat Leggett circulated a copy of 'After the Battle' with the suggestion that we could reprint an article therein or, perhaps, issue it as a Supplement. Carl suggested that we could serialise it. David Read felt that we must look at the cost involved before going ahead.

**Historical Gramophone Society** Request received from the Historical Gramophone Society for copies of our journal. The Chairman to send.

**14 Items for Next Committee Meeting** Membership renewal, Guidelines for organisers, Draft copy of rules, BVWS and the Internet.

**15 Next Meeting** June 10th 1997 at Ian Higginbottom's house in Ealing.

letters continued from page 42

frame aerial for the same market.

The original Horophone is of course included in Dr Boullin's article, but he doesn't mention this time the 1913 set from A.H.Ratliff of Coventry to which he drew attention in a letter following David Read's article in Bulletin 21/2.

It was not only professional clock makers who wanted to set their timepieces accurately. Quite a number of early domestic crystal sets had provision for a long wave loading coil with which the Eiffel Tower time signals could be received: some sets actually had a tuning stud marked 'Paris' for this purpose. But a 1921 crystal set specifically designed for the

horological trade was the 'Tempus' from W.J.Badman & Co of Weston-super-Mare: this was a very affordable product costing £5, or £7 for a de-luxe version.

As regards broadcasting, time signals were sent out by the BBC from the very beginning, some months before Hope-Jones' introduction of British Summer Time in 1923. These very early signals took the form of 'Westminster Chimes' played on the studio piano or tubular bells, with a final 'bong' at the exact hour or half-hour. As Dr Boullin has noted, Hope-Jones counted down the final five seconds before the start of Summer Time,

and this counting down was adopted from then on by the BBC announcers, the chimes being discontinued. In February 1924 the BBC took time signals direct from Greenwich Observatory, and so commenced the 'six pips'. Since 1990 the pips are no longer taken from Greenwich Observatory (which is now in fact at Cambridge), but from the BBC's own rubidium atomic time standard, itself automatically corrected from the Global Positioning System satellite's caesium oscillator.

Yours sincerely, Pat Leggett

# Back issues

Vol 10 Number 2 Inc. The KB Masterpiece, Extinct Species "A Monster Defiant".

Vol 11 Number 2, 3, 4 Inc. BTH VR3 (1924) receiver, Marconi's 1897 tests, Origin of the term 'Radio', Baird or Jenkins first with TV?



Vol 12 Number 2, 3, 4 Inc. the Emor Globe, The Fultograph, Ekco Coloured Cabinets.

Vol 13 Number 1, 2, 3 Inc. Direct action tuning, The Philips 2514, Noctovision.

Vol 14 Number 1, 2, 3 Inc. Cable broadcasting in the 1930's, The story of the Screen Grid.

Vol 15 Number 1, 2, 3, 4 Inc. The wartime Civilian Receiver, Coherers in action, Vintage Vision.

Vol 16 Number 1, 2, 3, 4 Inc. The Stenode, The Philips 2511, Inside



the Round Ekco's.

Vol 17 Number 3, 4, 5 Inc. Wattless Mains Droppers, The First Philips set, Receiver Techniques.

Vol 18 Number 3, 4, 5 Inc. The First Transistor radio, The AVO Valve tester, The way it was.

Vol 19 Number 1, 2, 3, 4, 5, 6 Inc. The Birth of the Transistor, Super Inductance and all that, reflex circuits, A Murphy Radio display, restoration.

Vol 20 Numbers 3, 4, 5, 6 Inc. Radio Instruments Ltd., Japanese shirt pocket radios, Philco 'peoples set', notes on piano-keys, the story of Pilot Radio, the Ever Ready company from the inside, the Cambridge international, the AWA Radiolette, this Murphy tunes itself!

Vol 21 Numbers 1, 2, 3, 4 Inc. Marconi in postcards, the Defiant M900, GPO registration No.s, Personal portables, the transmission of time signals by wireless, the Ekco A23, historic equipment from the early marine era, the birth pains of radio, inside the BM20, plastics, Ferdinand Braun, pioneer of wireless telegraphy, that was the weekend that was, the first bakelite radios, BVWS - the first five years,

the world of cathedrals, Pam 710.

Vol 22 Numbers 1, 2, 3 inc. Another AD65 story, the Marconiphone P20B & P17B, listening in, communication *with* wires, the story of Sudbury radio supply, French collection, Zenith Transoceanics, Farnham show.

## Supplements:

1 "Just a Few Lines" The Birth and Infant years of BBC Television.

2 "Metro-Vick 1922-1928", "Early Television in the UK", "Industrial aspects of the Valve before 1925"

3 'Seeing by wireless' the story of Baird Television

4 reproduction Marconi catalogue

Earlier Bulletins and supplements are priced at £2:00 each + postage. Bulletins from volume 21 onwards are priced at £2.50 each. + postage.

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All requests for back numbers, should be sent to the Chairman (Willem Hackmann) whose address can be found in the inside-front page of this Bulletin.

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# N E W S

## 1997 Harpenden meetings

The following meetings are all swapmeets with extra attractions and they are: Sunday **7th September** and the **30th of November**.

## Other meetings

**21st September:** Portishead  
**12th October:** Southborough Radiomeet  
**12th October:** Shifnal (Radiophile Swapmeet)  
**26th October:** National Vintage Communications Fair at the NEC  
**15th November:** Horsham Swapmeet  
**7th December:** Wootton Bassett

## American meetings

**3rd - 6th September:** Antique Wireless Association '36th Historical Radio Conference' (information: AWA, Box E, Breesport, NY 14816. Secretary's telephone: 001 607 739 5443)

## Horsham meeting

On the **15th November** there will be a swapmeet at the Salvation Army Community Centre, Booth Way, Horsham, West Sussex, (off 'Do-It-All' roundabout near Horsham station). Doors open 10.30 to stall holders and 11 everyone else. Tables will cost £12.50 including entry for two people, otherwise £1.50 per person. Home cooked lunches and snacks available throughout the day. Ring Les Daniels for bookings at 01403 263651.

## 1998 Harpenden meetings

It might seem early but since the dates are already booked, 1998 begins (for the BVWS) with a swapmeet on Sunday **1st of March**. Sunday the **7th June** hosts an auction, a restoration contest and the AGM. Autumn is heralded with a swapmeet on **6th September**, and the year finishes with a swapmeet on the **29th of November**.

## Gerald Wells' garden party 1998

Gerry Wells will be having a garden party on Saturday **6th June** at the Vintage Wireless Museum, 23 Rosendale Road, West Dulwich, London SE21 8DS. Telephone 0181 670 3667

## 70 years on

The Royal Television Society is 70 this year having been launched at the British Association meeting at Leeds in 1927. This year they are holding their annual Festival of Science in the same town and Douglas Pitt, Chairman of the Narrow bandwidth Television Association, has been invited to give commemorative talk: 'Television, the John Logie Baird dimension' on 7th September.

## Hastings lecture

The White Rock pavilion at Hastings opened 70 years ago and John Logie Baird gave a public lecture on television at the Science Exhibition held there on 7th October 1927. Ralph Barrett will be giving an anniversary talk on 15th October at the same location entitled: 'Baird—the man and his television. Early 30-line pictures on original televisions will be shown, as demonstrated at the Institution of Electrical Engineers and the Royal Institution last year.

## Bulletin Index

The Bulletin Index is currently available up to issue 22/2 and is a complete cross reference of authors, subject matter and main articles back to the beginning of the Society. Please send a large SAE (31p stamp) with a cheque for £2 payable to Pat Leggatt at 28 High Park Road, Farnham, Surrey, GU9 7JL. Telephone 01252 719081.

## New Articles

*If you have anything interesting to say concerning Wireless, Television, Broadcasting, Collecting etc. please send it to the Editor for future publication in the BVWS Bulletin, as the Bulletin is only as interesting as the articles that comprise it. We welcome all suggestions and comments regarding the new appearance of the Bulletin and hope that it is catering to your needs as a collector / enthusiast / historian. Your article can be just a few paragraphs long as long as you think it conveys its message across to your fellow members.*

*Also if you have any photographic material that would look good in the Bulletin, don't hesitate to post it to the Editor. The chances are that I will definitely use it!*

*Please send all articles hand written, typed, and / or on floppy disc to: Carl Glover, c/o Runciter Corporation, 33 Rangers Square, London SE10 8HR.*

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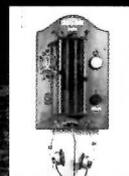
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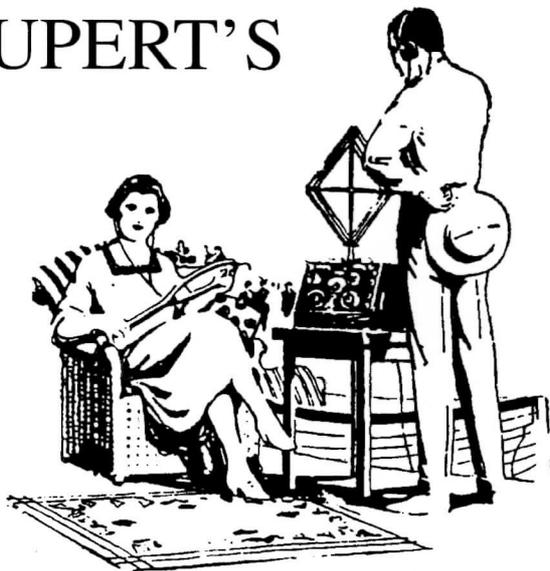


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volume 22 number 3 Autumn 1997

