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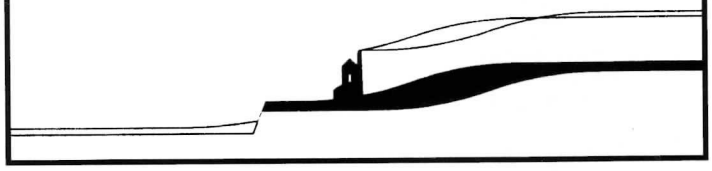

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Volume 22 No.2 Summer 1997

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Separations by Cutting Edge
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Honourary Members:
Gordon Bussey
Dr A.R. Constable
Keith Geddes OBE
Ray Herbert
David Read
Gerald Wells

Front Cover: Zenith Transoceanic model Y600.

Rear : Detail of Zenith Transoceanic model 7G605.

Front Cover Photography by Mark Groep
Graphic Design by Carl Glover

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From the chair

The Annual General Meeting is not usually the best show in town, so it was very gratifying to see so many members present. It is one of the few public occasions when you can see the committee members go through their paces. This one was no exception! I do believe, however, that the AGM is an important ritual in the calendar of any society. There is the opportunity to survey the year, to ask questions, and to offer well-deserved praise (or grumble). This is also the time to say good bye and 'thank you' to those who leave the committee and to introduce the new members. The two members who are leaving the committee are Rupert Loftus-Brigham and Ken Tythacott. Both are well known and have, over the years, contributed a great deal to the BVWS. Rupert through his unflappable good sense and deep knowledge of early radio. He is a fount of arcane knowledge about early sets, especially pre-broadcasting. Many a time I have sought his advice, often to discover that what I (because of my enthusiasm and inexperience) had thought to be unique was in reality rather commonplace. Ken, too, has been a prominent member for many years, long before he became our Events Organiser, a task for which he has been particularly well suited because of his meticulous nature. His crowning achievement was our 1996 Commemorative Exhibition. Turning the pages once again of the catalogue compiled for that occasion by Ken in consultation with Pat Leggatt and Geoffrey Dixon-Nuttall, I am forcibly reminded by the wealth of material on view on that day. Ken's enthusiasm for wireless history goes beyond the walls of Harpenden and of the other swapmeets. Over the years he has organized many historical displays of radios - witness the photo-montage on page 26 of this Bulletin of the 'Radio Days' exhibition he has put together at the Museum of Farnham with the help of Geoffrey and Pat. Such exhibitions must surely be a contributory factor for our growing membership.

The results of the election for chairmanship were announced at the AGM by the Scrutineers. The Minutes of the AGM will be published in the next Bulletin. The figures were: 222 for myself, 171 for Pat Leggett and 72 for Ken Tythacott. First, a 'thank you' to Gordon Bussey and Tom Going for organizing the count - a tedious but very necessary task. Next, I would like to express my appreciation to the members who supported me. I shall do my best to make sure that your confidence was not misplaced. I am aware that much needs still to be done, but that on the whole the Society is in a good state of health. May it long continue so! I am continually urging members to be as active as possible in the Society's affairs: to discuss matters with committee members, to vote and to write for the Bulletin. The more active you are - the more democratic the Society will be. This election was a good opportunity to exercise your democratic rights. As it was there was a 41% return, so more of you could have voted. On the other hand, I am grateful to those who have taken the trouble to return their voting papers and complete the postal ballot on the Membership List. There was an overwhelming vote in favour for such a list. Mike Barker, the Membership Secretary, is now in the process of sorting out the details. Printing and distribution should occur in due course. The Society's new constitution is also now in place, thanks to the hard work of Guy Peskett. He is now collating the suggestions from the membership about some of the finer points of the constitution. This 'fine tuning' of our constitution will be ready for next year.

Three new members have joined the committee unopposed. All are well known to you. Guy Peskett, who was co-opted with the brief to sort out our constitution is now a full member. Pam Zimmer has taken over the role of Events Organiser. One of her main tasks is to co-ordinate the various swapmeets. Please contact her about these events. Unlike her predecessor Ken, she will not organize Harpenden. This has been taken over by Ian Gurton, for which the committee is extremely grateful. Pam has also been asked to look into sorting out the rules of conducts for our swapmeets. You may remember that some time ago I suggested that besides revamping our constitution, there was also the urgent need to look at the Society's bye laws or rules of conduct in particular those concerning our swapmeets. The committee's intention is to sort this out in the coming year. This should lead to some lively discussions!The third new committee member is a long-standing member indeed, Pat Leggatt. He requires no introduction.

There was a 'Stop Press' in the previous Bulletin with the good news that the Marconi auction had been aborted. Since then there was a press release on 25 March with a few details. As far as I can gather the present position is that the Marconi apparatus will go 'for safekeeping' to the Science Museum in London and the Marconi archives to the Record Office supervised by the Chelmsford Borough Council. I had hoped that the GEC-Marconi Collection could have formed the core of a new museum, perhaps to be called 'The Museum of the Spoken Word' similar in concept to the highly successful London 'Museum of the Moving Image'. Important historical hardware that has recently become available from the BBC and British Telecom could also be housed in this new museum on the history of broadcasting and electronic communications. My letters making this suggestion to several of the interested parties have not borne fruit, but who knows what the future might hold. At least the seed of an idea has been sown. I had hoped that both the hardware and the archives would have been kept on the *same* site, but this was not to be. On the plus side, however, at the very least the GEC-Marconi collection had been kept intact for the Nation. The good fight to preserve this material was joined by many in and outside the BVWS. Our gratitude must go to our members who wrote letters to *The Times* and other newspapers, to Enrico Tedeschi who kept us posted on his Internet bulletin board, to those who gave sound advice to the GEC-Marconi Board of Directors, and ultimately to GEC-Marconi for their positive response.

This brings me to the Millennium celebrations. I admit that this is a rather over exposed topic, but even so I am wondering whether the BVWS should mark this event. Suggestions to me or to the editor will be most welcome. In the meantime, I would like to wish you all on behalf of the committee a happy and successful year.

Willem Hackmann

Dr Tony Bridgewater OBE

Sadly we have lost one of our Honorary Members: Tony Bridgewater died in February atthe age of 88.

He devoted nearly all his working life to television, from his joining the Baird Company in 1928. His first important duty was a visit to Australia with Ben Clapp in 1929 to demonstrate television in Sydney.Following this he spent many long latehours preparing the Long Acre studio equipment for the first public television service, transmitted from the BBC's 2LO transmitter on the roof of Selfridge's. He undertook some announcing duties in addition to his technical work, and wasinstrumental in the first major outside broadcast of the Derby in 1931.

In 1932 the BBC took over responsibility for programme origination, using Baird equipment, and invited Tony to join the Corporation. This he did, and looked after the engineering aspects of the 30 line service until it was closed down in 1935.

From the start of the high definition service in 1926 he had considerable responsibility as a Senior Maintenance Engineer in Alexandra Palace, notably for the Coronation outside broadcast in 1937.

He spent the War years as a Squadron Leader on radar work, then returning to the BBC. By 1945 he was Engineer in Charge of Television Outside Broadcasts, a role later enhanced as Superintendent Engineer in which capacity heplayed a major part in the 1954 initiation of Eurovision. Tony was finally promoted to be Chief Engineer,Television with overall responsibility for all television operations in London and the Regions. He was awarded the OBE and was elected a Fellow of the Royal Television Society.

For the BVWS he wrote the 1992 Supplement 'Just a Few Lines' on 30 line television, which was much appreciated by all and recognised by offering him Honorary Membership of the Society. He was delighted with this, and also with the award a few years later of an HonoraryDoctorate from the University of York.

As a person he was one of the nicest of men and, as my former boss, tolerant but firm on occasions when I failed to match his high standards. He will be much missed by all former colleagues and friends.

Pat Leggatt, in conjunction with Ray Herbert.

Transoceanic!®

by Geoffrey Dixon-Nuttall

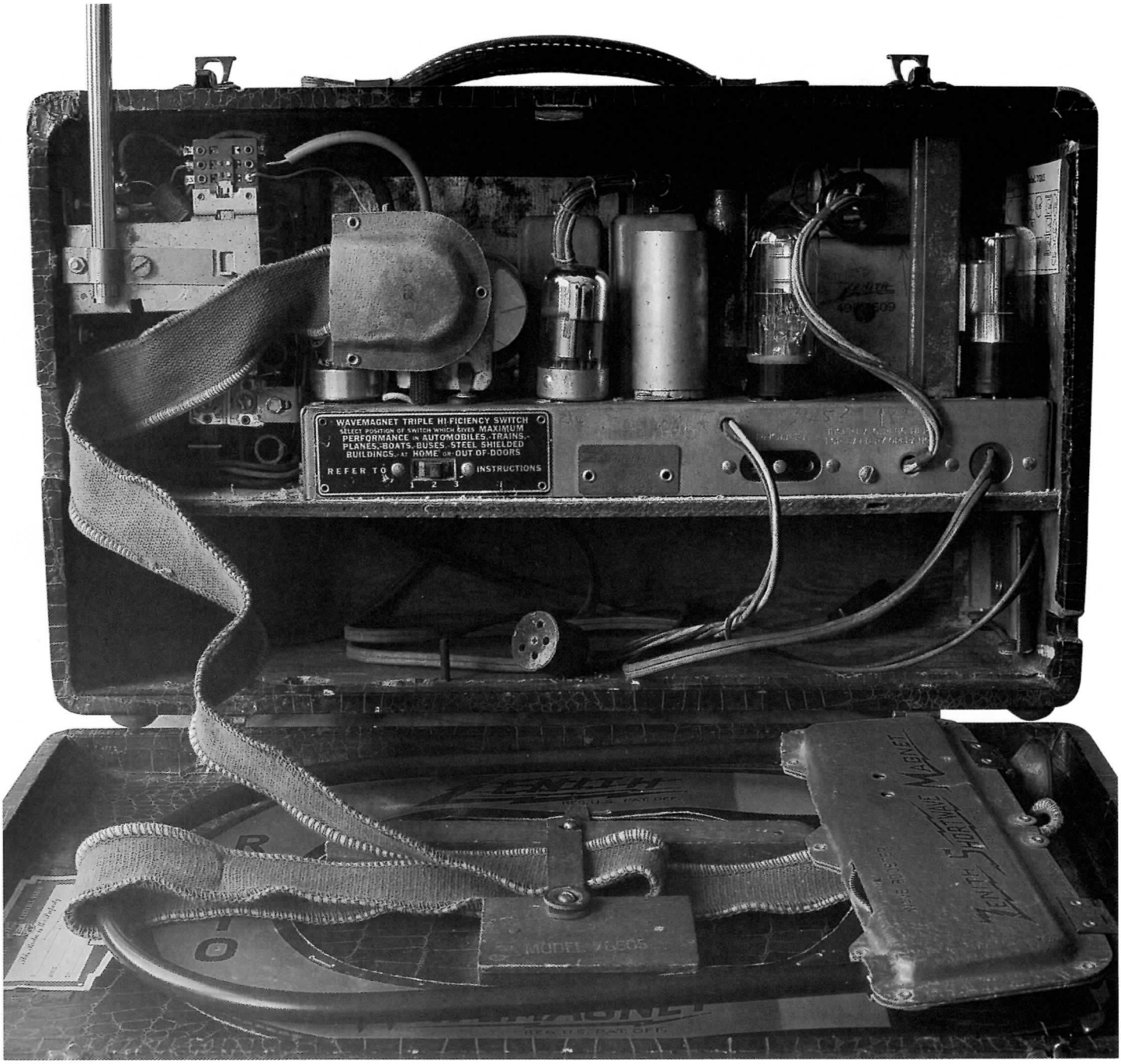
In this country the Zenith Transoceanic portables are not very well known, but they really are worth serious consideration. Recently a book appeared on the subject ("Transoceanic- the Royalty of Radios" by Bryant and Cones.) This has some very nice pictures but the technical information is virtually nil, and some of what there is is misleading.

Alan Douglas (later in this issue of the Bulletin- Editor) has done what amounts to a very painstaking critical review on the historical information in this book, which is included as an example of careful research. I'm glad I don't have to sit through any Eskimo folk songs.

The Zenith company was owned by a colourful character called Commander E.F. McDonald Jr., who was fond of sailing to far-flung places, and always asked the firm why their radios never worked there. In 1941 they had a go, and developed the set which was to be the first of the Transoceanics. It had quite a specification, mains-battery, bandspread on all the amateur short wavebands, and a very comprehensive tone control system. Their main problem was to get

Left: Zenith Transoceanic model 7G605

Right: Transoceanic model 7G605 viewed from the rear, displaying 'Wavemagnet' aerial.



the local oscillator to work reliably at high frequencies. The set therefore had a separate oscillator; it also had an R.F. stage. (see later). There are seven valves in total, including the rectifier.

These early Transoceanics are quite rare, and particularly so in this country. I recently acquired one, in a poor state of health, but having got it back to the way it should be, removing many well-intentioned modifications, it is really quite impressive.

This set was marketed in 1942, but the war soon involved the US, and the sailing ship on the fret turned into a (badly drawn) Flying Fortress. Not many were made before the factory shut down to do war work, which is one reason why they are so rare. They only made about 35,000 of them, which is a small run by their standards.

American circuit diagrams are, I find, not very easy to understand, so it took me some time to work out that the RF stage does not actually do anything on the SW bands. Bryant & Cones' Book doesn't tell you that the circuit diagram is in Rider, but it is (vol. 13), and without it I would have been in trouble. The push-button switching is quite difficult to follow, even with the diagram. The previous owner had done terrible things, like changing two of the valveholders to octals, and *soldering* them in. I have also had to handpaint the bomber on the fret.

He had also thrown away the escutcheon for the tone switches. This is described as 'nickel' but if it matches the one for the other buttons it is a sort of fake oxidised silver. I had to make a new escutcheon anyway as his home-made one didn't fit anywhere, so mine is finished in silver paint with smudges of black boot polish. I am not very keen on this, but it is the nearest match I can get. The whip aerial was also missing, together with its bracket. Oh yes, and there was woodworm.

Various of the features of the first Transoceanic were carried on down the line. The frame aerial can be removed from the cabinet on a long cable, and attached to a window by two rubber suckers, for use in a metal vehicle, such as a train or aeroplane. This first model also had a single turn short wave frame, with its own trimmer. These frames were christened 'Wavemagnets'®, and the medium wave one is got up to look like a horseshoe magnet. In addition there was a telescopic aerial for normal SW reception; raising this switches out the frames and inserts a loading coil. This aerial was called the 'Waverod'. The tone control system was worked by four switches and called the 'Radiorgan'. As you can see, these things speak their own language! The cable connecting the frame has a capacity, and the only way they could get it to more or less cover the band was to take off turns and add a loading coil. A small switch either adds capacity or shorts out a few turns on this to try to 'bend' the tuning of the frame. The 'Radiorgan' consists of four switches, and as these have two positions each there are in theory sixteen

Below: Zenith Transoceanic model Y600

Right: Transoceanic model Y600 viewed from the rear, displaying 'Wavemagnet' aerial.

different combinations. As you would expect, several of them sound the same.

The first model (7G605) was succeeded after the War by the 8G005Y. This as you may have guessed, had eight valves, with push-pull output. (The eight included the rectifier, of course.) It was a tidied-up version of the original Clipper, but had grown, and they had it properly styled; the 7G605 always looked rather like an adaptation of something else.

One of the drawbacks of having all these valves was that it made the battery supply a bit untidy. The filaments are in series, so this implies a 10.5 volt battery. As the standard Zenith one was 90+9, an extra pair of cells had to be accommodated, in parallel, to get it right.

The next model was the G500, which came out in 1948. This now used miniature valves (five of them) instead of loctals, and the RF stage worked on all bands. The push pull output was abandoned, and a selenium rectifier used, giving instant warm-up. All sets from the G500 on could be fitted with an adaptor to work from 220 volts AC/DC. (This contains *another* selenium rectifier, so beware).

This set was re-styled in 1951 as the H500. The differences were mainly in the appearance. This set had a military version, R-520, which was stronger and finished in brown, with a spare set of tubes on board.

The final version of the valved Transoceanic was the 600 series, which had a 'slide rule' dial. This set was also available in brown, and these look very smart. The 600 included a dial light, and the frame aerial became a ferrite slab. The mains lead was self coiling, like a vacuum cleaner, and a funny little barretter was fitted.

The sometimes absurd advertising may give the idea that the whole thing is another cheap and nasty American radio. However, although they are not communications sets, the performance is quite impressive. The later ones have good speakers, and sound very pleasant, for a battery set. The sensitivity is good, but the AVC action is poor. They are well put together, and the component quality is good. I think they merit a place in one's

collection. They give little trouble, but as usual the selenium rectifiers have passed their best. One or two of the valves are quite hard to find, for example the IL6 frequency changer, which seems to have been made specially for them, and some of the loctals, I think I have the last ILE3 in this country!

The coming of the transistor made for a line of smaller Transoceanics, which are very nice if you like that sort of thing. The original model had a clever idea, in that the telescopic rod pulled out of the end of the handle, unfortunately the construction was too flimsy, and they are usually found in a damaged state.

However, there is no disguising the fact that the whole idea is basically flawed. This is a *big* radio, and the idea of carrying it on holiday is just not on. Even without the batteries it is quite a handful, and sticking the Wavemagnet® on the window of any train unless in a private carriage would cause an uproar.

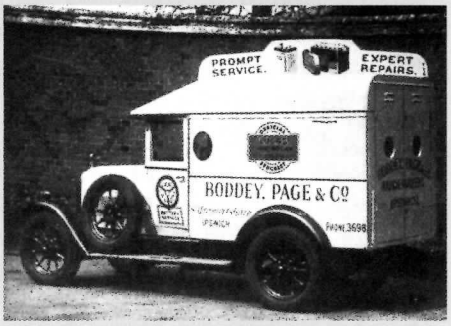
This, I think, is one of those products that appeal to the man who has to have everything. It was sold by the seductive advertising, but was impractical. (Keep in touch, wherever you are in the world; a great idea, but...). Just as the world is full of four wheel drive vehicles that never get muddy, so most of the Transoceanics probably spent their lives tuned to the local, in the kitchen.

Tales from the trade

by Harold Page

'P' for Earth

The front of Harold Page's father's Wireless shop, a business that was passed on to his son after the Second World War



The van of 'Boddey, Page & Co.' that provided 'prompt service' and 'expert repairs' in the Ipswich area of Suffolk

No, this is not an announcement to change the E symbol for earth for another letter, but a true story told to me recently by a long lost cousin when I told him of my retirement interest in early wireless.

Their first family wireless was a two valve affair which could drive two sets of headphones. His farming father would sit for hours scanning the tuner, adjusting the reaction and other knobs. When Dad picked something interesting, the boy, or one of his sisters, would be allowed a stint on the second set of headphones to decipher, in between the crackles, a programme from Hilversum, Radio Paris or even Radio Lyon on a good day.

Mother was too busy in the dairy or attending to the household chores to waste her time in such useless heathen persuits. However, there was one exception. On Sunday evenings she liked to listen in to the Dance Band. Everybody had to keep quiet for Mother's weekly entertainment by ether.

Sod's law prevailed, even in the 1920s, and sometimes the programme would fade, always in the middle of Mum's favourite piece. Dad would run to the wash house, grab the spare accumulator and do a quick change over. If this failed it could be that the earth rod had become dry. The water had to be carried daily in buckets from the well, so one seldom wasted water on the earth rod which didn't grow or produce even a flower.

As a last resort, Dad would say to his son, "Would you go outside and pee on the earth rod boy". The miracle cure always worked and Mother was happy to hear her programme. Modesty would have prevented her from knowing the cure.

It really was Pee for Earth in this household.

Gods and Mythology at Zenith

A commentary on 'The Zenith Trans-Oceanic, The Royalty of radios' by John H Bryant, AIA and Harold N Cones, PHD

by Alan S. Douglas

This was originally written as a commentary on chapter 1 of the Trans-Oceanic book, which according to the book's advertisements 'contains much new information on the early history of Zenith radio.' Unfortunately much of this 'new information' is balderdash, faulty reminiscences by Zenith's president Eugene McDonald, or fabricated from whole cloth by Zenith's advertising department. I apologize in advance for the level of detail necessary, and the assumed familiarity with Zenith's products and the book's claims. But I need to show that when contemporary sources differ from the Commander's recollections, the original sources must always be the more credible.

In the two and one-half years since I originally wrote most of this commentary (a copy of which went to the authors as a professional courtesy) they have produced no contemporary evidence for their statements, though they claim to have full access to the Zenith corporate archives and to McDonald's personal papers. What they may publish in their forthcoming history of Zenith I of course cannot predict, but as the Trans-Oceanic book must be judged on its own merits and with the sources cited in it, it will serve as an example of how history can become bunk.

'Certainly in industrial history, when a commanding managerial personality has a public relations corps at his service, his press agents are perfectly capable of creating a legend which, endlessly repeated, will firmly establish fancy as fact.'

Words of wisdom, by Carl Dreher in 'Sarnoff, An American Success' (Quadrangle/New York Times Book Co., Inc., 1977).

Unfortunately now it's 'deja vu all over again' as corporate hype becomes historical fact at the hands of two uncritical authors.

Wanting to tell the story of the Trans-Oceanic's creation is understandable, as is the reliance on one man's perspective, since by all accounts Commander McDonald (by strange coincidence the same person as featured in this years image on *From the Chair*- Editor) was the driving force behind the project. There is also a good deal of contemporary documentation for this reading of events. But to rely on company archives for previous history, without checking original sources, is a serious mistake. For Zenith's first 35 years of existence it was totally controlled by one man, one who was not shy about Stalinizing the past. The names Thomas Pletcher and QRS for instance were entirely erased from corporate history, but Zenith owed its very existence in 1921-23 to the QRS Piano Roll Company and its extensive network of music dealers, more than to McDonald's guidance. Pletcher by 1920 had absorbed all of his competitors, and QRS was the largest such company in the world, with 1920 sales of $3,600,000. (Total radio sales by all companies were $2,000,000 in 1920) But as player-piano sales were about to peak, QRS needed to diversify, and radio was the ideal medium. QRS joined with Zenith to become its marketing agent (the Zenith partnership had to continue in existence to hold the all important Armstrong regeneration license) and Zenith even relocated to the QRS factory. A corporate history that ignores Thomas Pletcher and QRS is no more than fantasy.

It was no accident that the radio manufacturing companies that seemed to grow into giants overnight, like Atwater Kent and Philco, had elaborate dealer organizations in place long before their entry into radio, while companies with equally good products but no marketing networks withered and died.

When Tom Pletcher's grandson dug out scrapbooks and financial records from the attic for me, I was amazed at how little the official Zenith history and truth coincided. I was so struck by this that I got permission to reprint the 1955 official history (after a couple of mushroom clouds at Zenith HQ when they finally read my text!) in my books, alongside my own reading of events.

Although the Trans-Oceanic authors ostensibly used many different sources, newspaper and magazine articles as well as McDonald's own letters, every one of these 'independent' articles was written with McDonald-furnished and *McDonald-approved* material. What the Commander himself didn't claim, his publicity department did. Some of this was done unintentionally, by the Zenith people actually believing their own early advertising claims, or through ignorance, or by the inevitable confusion of events

reconstructed twenty years later from memory. But myths they are.

Where to start? How about the list of Zenith 'firsts,' a list that grew over the years as new publicity people lost track of what really had happened in the dim past.

'The First AC Radio'. This claim is based on the Zenith X which was first advertised in September 1924 (August in the weeklies). Since this easily predates the RCA Radiola 30 from a year later, it's an open-and-shut case, until one realizes that although the X was *advertised* (for a few months) as an AC set, it was never *made* that way. Factory service literature consistently refers to it as a battery model. No AC model X is known to exist (for that matter, no model X is known to exist at all) so there is absolutely no basis for assuming that it could run on AC.

Furthermore the point is moot, since the AC-powered Dynergy was advertised in June, three months before. The Dynergy did exist, and still does, as I know of at least two.

'Single-Dial Tuning'. Now really! The claim is evidently based on the De Luxe models from September 1925, which did indeed tune TRF stages with a single dial, and an amazing chassis it is, too. But Mohawk did the same thing in November 1924, nearly a year earlier, and if you don't mind a few trimmer capacitors to align the stages, the Magnavox and Thermiodyne preceded that.

'Multiple Speakers'. This is almost getting to the first-to-use-a-dial pointer-in-the-shape-of-a-letter-Z category of trivia, I'll admit, but there it is. The X again is the contender, going head-to-head with the Grebe Synchrophase console, but it's a tie since they both came out in September 1924.

The last 'first' to be considered is a bit more complex: the portable radio. Complex because it depends on definitions—though the 1924 Zenith Companion can't be considered the winner in any event.

Mike Schiffer has covered the portable very well in his fine book 'The Portable Radio in American Life' (The University of Arizona Press, 1991).He went to Zenith headquarters to see their Companion portable, and found that, to everyone's astonishment, it wasn't a Zenith at all, but a little-known competitor called the Westburr. We went searching and found some newspaper and magazine ads, and it turns out that this Westburr actually preceded the Companion by four months. It was pictured in the February 1924 *Radio Dealer*, an issue whose advertising forms closed on January 15; therefore the set must have existed before that date. The Companion was first advertised in *Radio Digest* on May 10, 1924 and a month or two later in the national monthly magazines whose publication schedules were more extended.

Somehow this four-month lag becomes 'At nearly the same time (perhaps a month earlier)' in the professors' book, with the Companion emerging the winner. Reminds me of the Hitchhikers Guide To the Galaxy gag about a publisher stealing text from the back of a cereal box, sending it back in time, and successfully suing the cereal maker for copyright infringement!

Could anything be more transparent than the Commander buying a Westburr and ordering his engineers to copy it?

My own favorite in this contest is the Operadio 2, which was in production by August 1923 and advertised in December (yes, nationally if that makes any difference). Perhaps I'm just partial to radios that work. The Operadio sold, and stayed sold; the Westburr and the Companion didn't. The true definition of 'portable' is 'can be carried' but I prefer for radio purposes 'self-contained with antenna, batteries, and speaker.' Some people seem bothered that they can't carry the Operadio by its handle while it's working (the handle is part of the plug-in frame aerial) but why would anyone in 1923 want to? There was virtually no daytime programming to be heard. Would you carry a tube-type Trans-Oceanic around with the lid open and the whip extended? And with its whip up, the transistor model doesn't even have a handle. By this definition, the Trans-Oceanic may not be a portable either!

Curiously, this book begins its story of the portable radio with a description and photo of Howard Armstrong's wedding gift to Marion, the portable superhet. The photo caption says 'ca. 1923' but it must date between August and November of that year. All very well, but this is not a production model, so why is it here, as the supposed first step in the 'development of portable radios'? If one-offs are allowed in, what happened to the Bureau of Standards 'Portaphone' constructed in the early summer of 1921, which was complete with loop and horn (and carrying handle) or Francis Dunmore's 'Radio Valise' from May 1922, whose horn was completely enclosed

like the Companion's? Very selective rules, these.

The other Zenith myth that needs deflating concerns arctic exploration and short-wave transmissions. First, the assertion that MacMillan took a Companion with him for testing in 1923 is simply preposterous. It didn't exist then, the '99 tubes it used had barely become available from GE, and there is no record in his expedition reports of any such equipment. MacMillan departed Wiscasset, Maine on June 23, 1923 and returned on September 20, 1924 (it's all in the National Geographic for June 1925, and the 1925 expedition is written up in the November 1925 issue). Evidently the photo was taken on his next trip to Chicago.

More serious is the caption for the photo on p.16, showing Eskimos from Etah, Greenland broadcasting songs from the dining saloon of the Peary to 'the USS Seattle off Tasmania.' While this feat is not totally preposterous, a study of expedition logs and magazine reports shows that it did not happen, no matter what McDonald remembered twenty years later. This broadcast occurred on August 12, 1925 and was received at 9XN, Zenith's experimental short-wave station at Arlington Heights, on 40 meters, with the intention of rebroadcasting it on 322 meters. Unfortunately the broadcast occurred without prior warning, starting at 10PM Chicago time, and while it was received quite well, by the time all the engineers were found and the necessary equipment hooked up, it was 1 AM, little more than one Eskimo song was rebroadcast, and that was drowned out by a local thunderstorm. This is all detailed in a story in Radio Digest for August 29, 1925.

On August 12 the USS Seattle was anchored at Wellington, New Zealand, 1300 miles away, having left Melbourne on August 6. The only time the Seattle was 'off Tasmania' was during her arrival on July 20 or at departure; otherwise radio operator Schnell was ashore. While MacMillan was said to have broadcast McDonald's voice and songs by expedition members to 'all parts of the American continent' before the August 12 broadcast, it is quite unlikely that Schnell heard any of them. His log showed that he heard WNP enroute to Melbourne, but WNP was the Bowdoin, not the Peary which did all the broadcasting. The only two-way communication with WAP (Peary) was on August 19 and afterward. *(from QST,November 1925, p.50:*

On August 17 [the printed log says 19] 6AWT connected WAP and NRRL [Schnell] with each other for their first two way communication. NRRL reports hearing WAP's phone and one of the airplane sets using UV-201-As). And Schnell makes no mention, in a seven-page article in the January 1926 QST detailing his voyage, of any voice reception other than from 2NM, Gerald Marcuse in Surrey. Schnell's logs are printed in various issues of QST in late 1925, in the Traffic Dept. pages (not always included in newsstand issues).

Readers who haven't yet seen the book will be wondering who this Schnell was and what was the big deal with the USS Seattle. This was another venture mounted at about the same time as MacMillan's expedition, whereby ARRL Traffic Manager Fred Schnell joined the Navy for a fleet cruise to Australia to test short-wave communications. His work was a resounding success, and the friendly Zenith PR boys would have us believe that it was all McDonald's idea. However there is not a shred of evidence that Zenith had anything to do with it, that Schnell knew McDonald before the cruise *(Schnell almost certainly knew R.H.G Mathews, Zenith co-founder, but Mathews and McDonald both being prima donnas, kept well out of each other's way. Mathews in mid-1925 was touring the U.S. with Zenith's portable broadcast station WSAX. Schnell later joined Burgess Battery in Wisconsin and in 1929 Aero Products of Chicago.)*, or that the Navy ever bought any Zenith short-wave gear as a result. This is all dutifully asserted in the Trans-Oceanic book. The full story of this cruise is in QST, in DeSoto's book '200 Meters and Down,' in Howeth's 'History of Communications-Electronics In the U.S. Navy' and in A. Hoyt Taylor's typescript reminiscences.* Zenith is not mentioned in any of these sources. And if Schnell had actually heard McDonald's singing Eskimos, it is simply incredible that he would have forgotten to say so.

The account of Zenith's growth on p.14 is seriously lacking in perspective. Being granted the first RCA patent license was not exactly akin to being knighted. RCA would gladly have signed up anybody at that point in 1927, and was cutting deals and forgiving past royalties to do it. McDonald evidently thought he got some advantage by being first in line, though some later holdouts fared better. Zenith did not, 'within a few years' develop into one of the 'largest radio manufacturers in the world.' Even by 1934 Zenith was ninth in the U.S., and outsold by

Philco twelve to one. By 1937 Zenith was up to third place, and after Philco blew it in the 1950s Zenith was consistently number two, behind RCA, but this is stretching 'a few years' rather far, as well as underestimating other manufacturers worldwide. For instance, Philips as of 1963 employed 80,000 in the Netherlands, and the main complex at Eindhoven could have swallowed several Zeniths without a burp (Zenith employed 7500 at that time).

Other unsupportable 'facts' appear in the book too, such as McDonald being 'one of America's wealthiest and best-known men' (he was neither) or the Zenith station WJAZ being 'one of America's first stations' (it was roughly 500th). Also repeated uncritically is the impossible fable of McDonald giving short wave radios to the Greenlanders in 1925: 'Wherever McDonald went during the expedition, he gave away short-wave radios, with extra batteries, to nearly everyone he met.' I might also mention, without going into a lot of detail, that McDonald was not *quite* the saint implied in the book. There is no doubt he was a genius in guiding Zenith through 35 shark-infested years, and in setting its course for the next 40, but many other people paid a *very* high price for his success.

**p.197: "I persuaded the Navy Dept. to call Fred Snell [sic] back to active duty."*

A. Hoyt Taylor was superintendent of the Radio Division of the Naval Research Laboratory. Even he could make errors in later reminiscences however. He credits Schnell with having a radiotelephone outfit while communicating with Marcuse, and even relates a humorous anecdote concerning it. But Schnell transmitted nothing but CW, as a writeup in Wireless World on September 2, 1925 on 2NM's work states specifically. And of course Schnell himself never mentioned having such a transmitter.

Auction and AGM 2nd March

Sunday the 2nd of March hosted the first Harpenden of the year. It was also the day of the Annual General Meeting where two new Committee members were announced: Pam Zimmer as events organiser and a welcome return for Pat Leggatt (who is well known within these pages) as an ordinary member.

The photograph above is of the brave souls who attended the AGM taken live from the stage. Shortly after the AGM the real business of the auction took place with many interesting pieces being sold at bargain prices.

The ones that r

photographs of some of the items from the aborted Marconi auction

Fig 1: A photograph of Marconi circa 1910.

Fig 2: A photograph of Marconi, 1928.

Fig 3: A Marconi dealers sign circa 1930.

Fig 4: The scene at Christies auction house on the day the auction was announced.

nearly got away

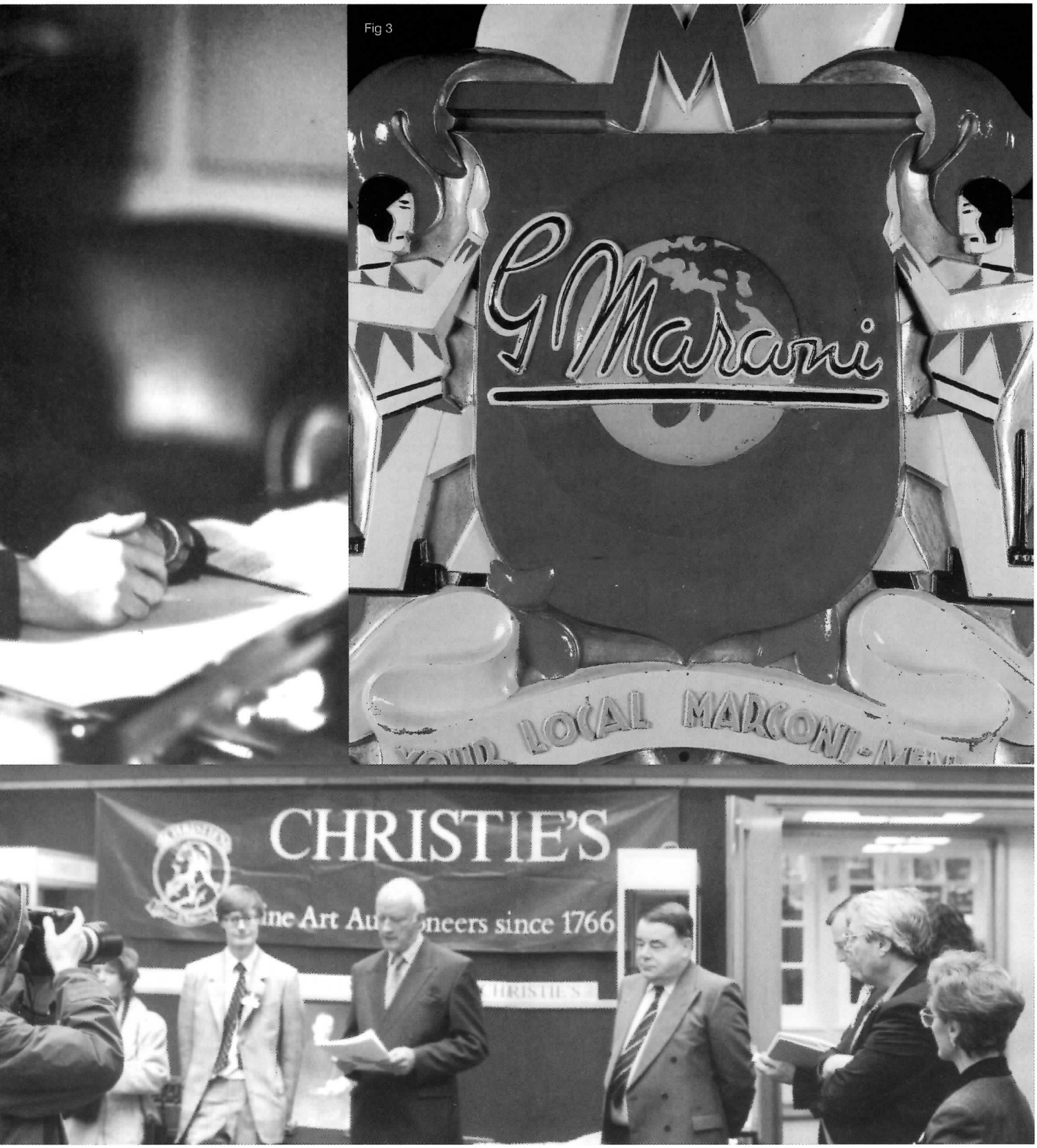
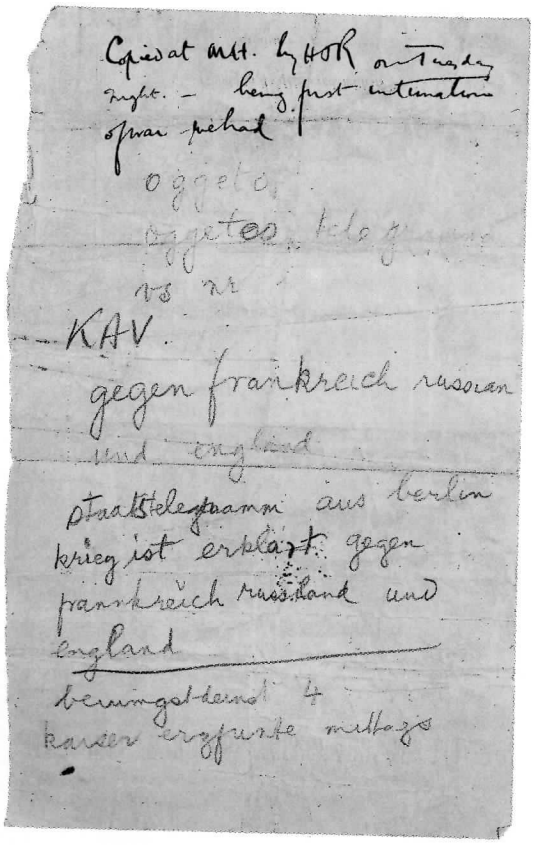


Fig 5



Copied at Mtt. by HOR on Tuesday night. – being first intimation of war pending

oggetto

oggetto telegramma

vs

KAV.

gegen frankreich russian und england

Staatstelegramm aus berlin krieg ist erklärt gegen frankreich russland und England

beunruhigt denn 4 kanen erfuhrte mittags

Fig 6

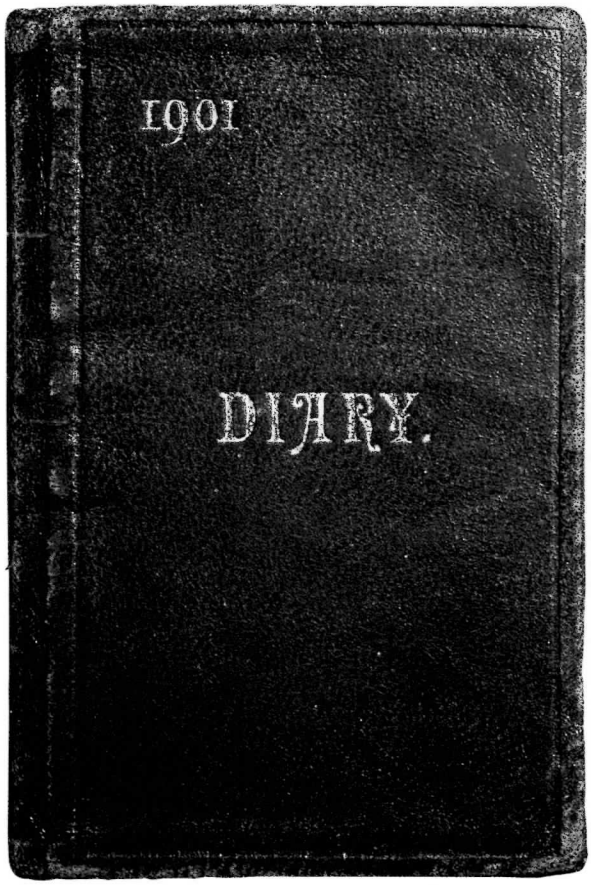


Fig 8

Fig 7

Fig 9

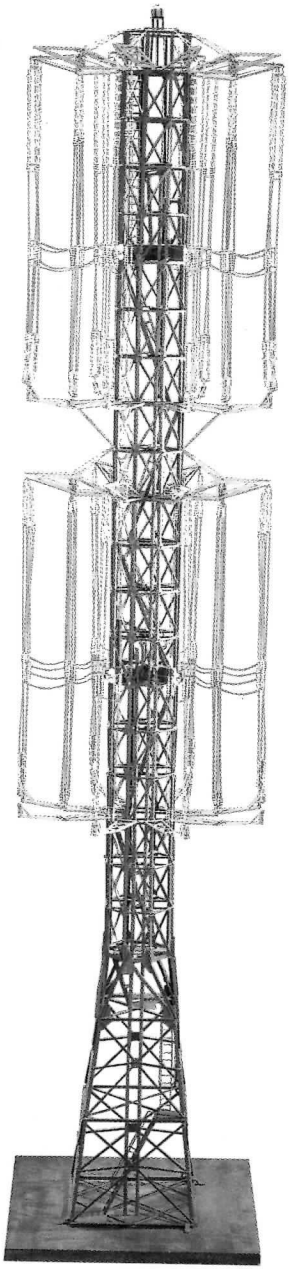
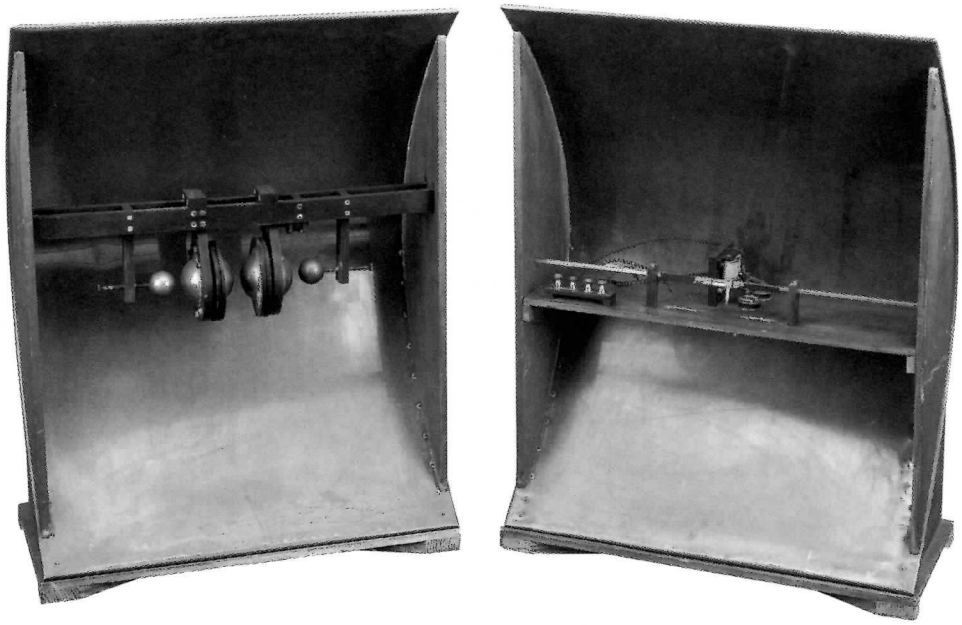
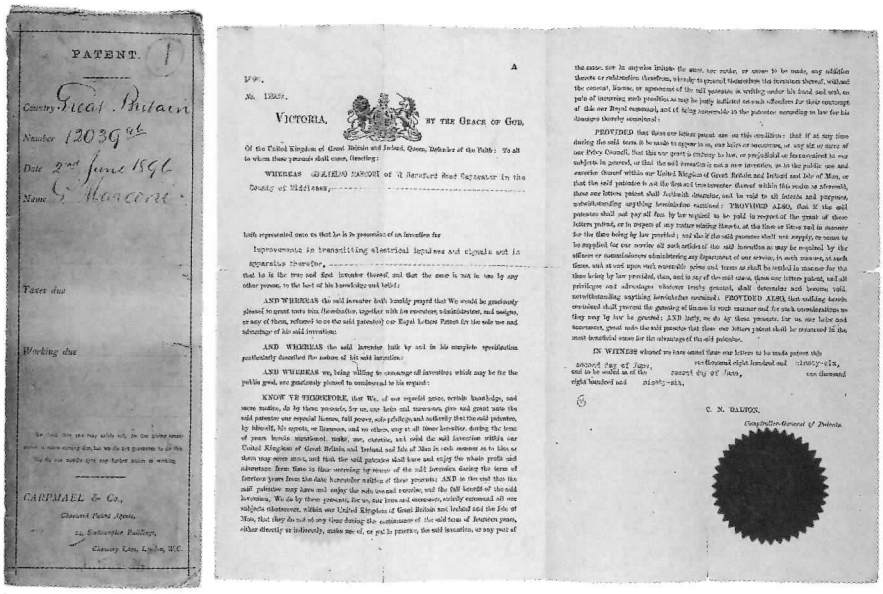


Fig 10





PATENT. 1

Country Great Britain

Number 12039

Date 2nd June 1896

Name G. Marconi

Taxes due

Working due

CARPMAEL & Co.,

Chartered Patent Agents,

24, Southampton Buildings,

Chancery Lane, London, W.C.

A

No. 12039.

VICTORIA, BY THE GRACE OF GOD,

Of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith: To all to whom these presents shall come, Greeting:

WHEREAS GUGLIELMO MARCONI of 2 Berkeley Road Barkingside in the County of Middlesex,

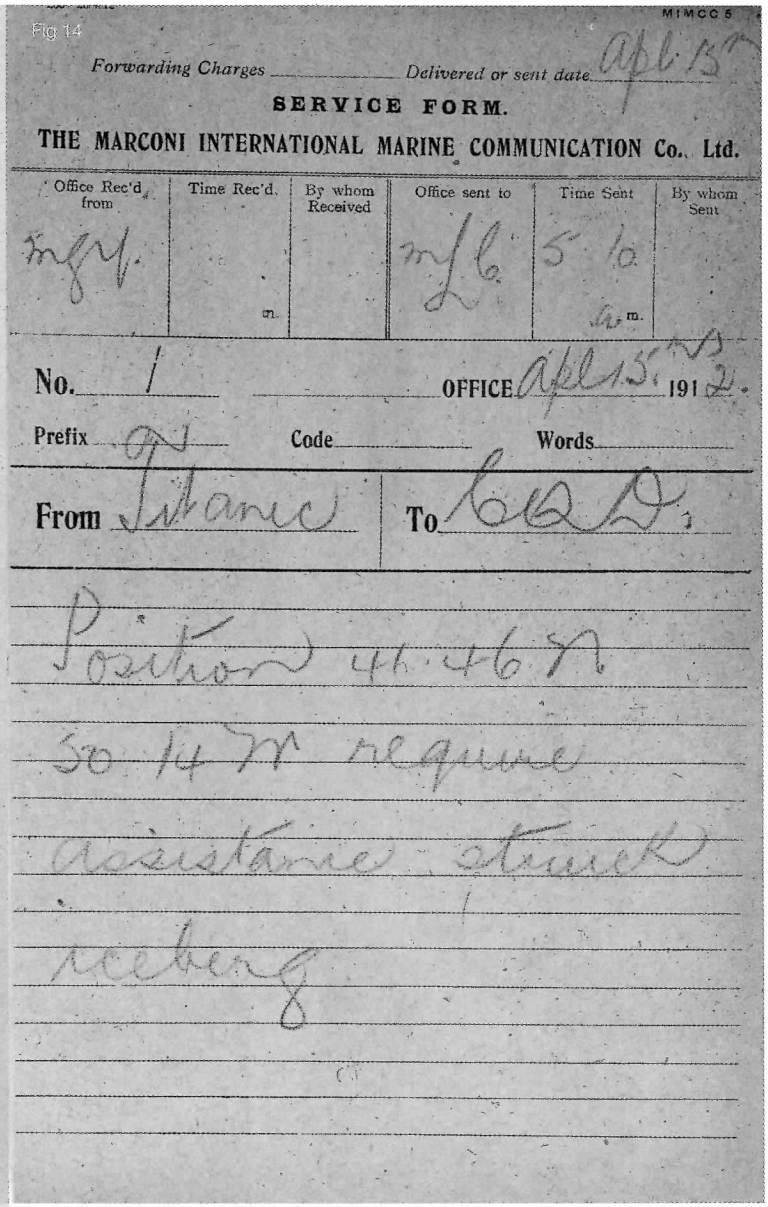
hath represented unto us that he is in possession of an invention for

Improvements in transmitting electrical impulses and signals and in apparatus therefor,

that he is the true and first inventor thereof, and that the same is not to the best of his knowledge and belief, or to the best of his knowledge and belief, or to the best of his knowledge and belief, or

Fig 13

Fig 14



MIMCC 5

Forwarding Charges _____ *Delivered or sent date* Apl 15

SERVICE FORM.

THE MARCONI INTERNATIONAL MARINE COMMUNICATION Co., Ltd.

Office Rec'd from	Time Rec'd.	By whom Received	Office sent to	Time Sent	By whom Sent
MGY	m.		MLB	5 10 a.m.	

No. 1 **OFFICE** Apl 15 **1912.**

Prefix QJ **Code** _____ **Words** _____

From Titanic **To** CQD

Position 41.46 N
50.14 W require
assistance struck
iceberg

Fig 15

Fig 17

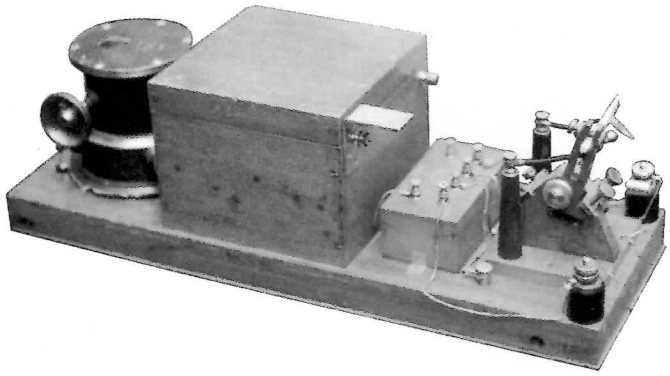
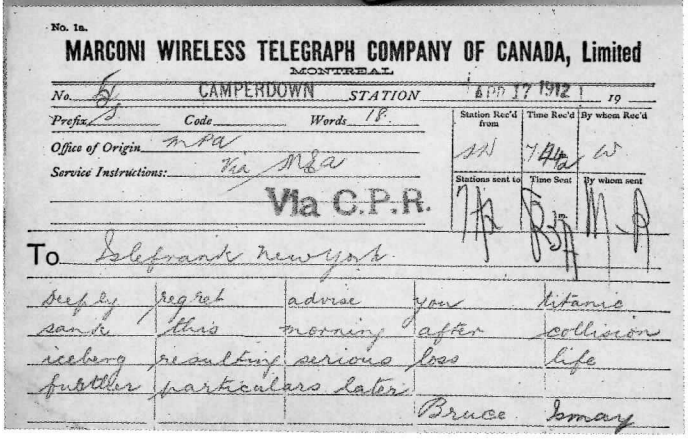


Fig 16



No. 1a.

MARCONI WIRELESS TELEGRAPH COMPANY OF CANADA, Limited

MONTREAL

No. 5 CAMPERDOWN STATION APR 17 1912 19

Prefix S Code _____ Words 18.

Office of Origin MPA

Service Instructions: Via MBa

Via C.P.R.

Station Rec'd from	Time Rec'd	By whom Rec'd
MH	7.44 a	W

Stations sent to	Time Sent	By whom sent
MA		

To Selfrank Newyork

Deep by	regret	advise	you	titanic
sank	this	morning	after	collision
iceberg	resulting	serious	loss	life
further	particulars	later		
			Bruce	Bmay

Fig 13: 'Wires without Wires', watercolour by Sir Leslie Matthew Ward ('Spy") for Vanity Fair, 1905.

Fig 14: A Marconigram reporting the sinking of the 'Titanic'.

Fig 15: Magnetic detector, 'Melba' microphone, multiplr tuner, Fleming valve.

Fig 16: A Marconigram from the Chairman of the White Star Line informing the Company that the 'Titanic' had sunk..

Fig 17: Probably a coherer receiver.

Mystery object revealed!

Above: The Vocaphon Baby minus detector, which is stored inside the top of the set.

Right: The Vocaphon Baby with detector in place.

Far right, top and bottom: Two Advertisements for the Vocaphon Baby.

Although many members wrote, faxed or telephoned their ideas on what the mystery object depicted in the last Bulletin was, only a handfull were able to correctly identify it as a crystal set! What appears to be a mains lead in fact is a capacitor isolated lead which, when connected uses the domestic wiring of a house as the aerial. Don't try this at home folks!

Michael Dupertuis, a Swiss member was able to offer the most information on this ingenious little set with an article he wrote in the *Old Timer's Bulletin* (the magazine of the American Wireless Association) of August 1989 which is reproduced here.

'I acquired this nice little crystal receiver in London about a year ago. At first it appealed to me because of its elegant shape. It was labelled 'Jacobi, Wien'. So I wrote to Radio Austria International in Vienna for information about the Jacobi firm, which was otherwise unknown to me. They forwarded my letter to the *Technisches Museum - Wien* whose director took great pains to answer it.

He wrote: 'We were able to identify it by the photograph you enclosed. It is a *Vocaphon baby* produced by Jacobi around 1925. The special feature of this crystal radio is the utilisation of the power line as an antenna. This is quite unique, while separate blocking capacitors for using the power line for the aforementioned purposes were frequently used. There was a similar radio in the late forties in Germany. It was the *Berlin-Stecker*. This radio using a SIRUTOR, the German equivalent of the WESTECTOR, for de-modulation. Unfortunately in our archives there is no mention on the company history of Jacobi.'

He kindly enclosed a few photocopied ads for the *Vocaphon Baby*. An advertisement published in *Radio Welt* (Radio World) No. 5 of 1925 claimed:

It requires	It offers
No antenna	Very pure reception
No current	Very low price
No storage batteries	Very low weight
No plate battery	Easy to carry
No running costs	Use without danger
No installation costs	Entertainment at home

So, as we have seen, the special feature of this radio is the use of the power line as an antenna with an internal blocking capacitor. The set consists of a blocking capacitor, a variometer, a crystal detector and a detector capacitor. Made of ebonite, it is five and a half inches high and three inches in diameter. The two split pins on the bottom of the case plug into either the base or directly into the 220 volt 50 Hz power line. Another feature is that the set is entirely fitted with pins and plugs: the cap plugs into the body of the little radio and the galena detector plugs into the cap.'

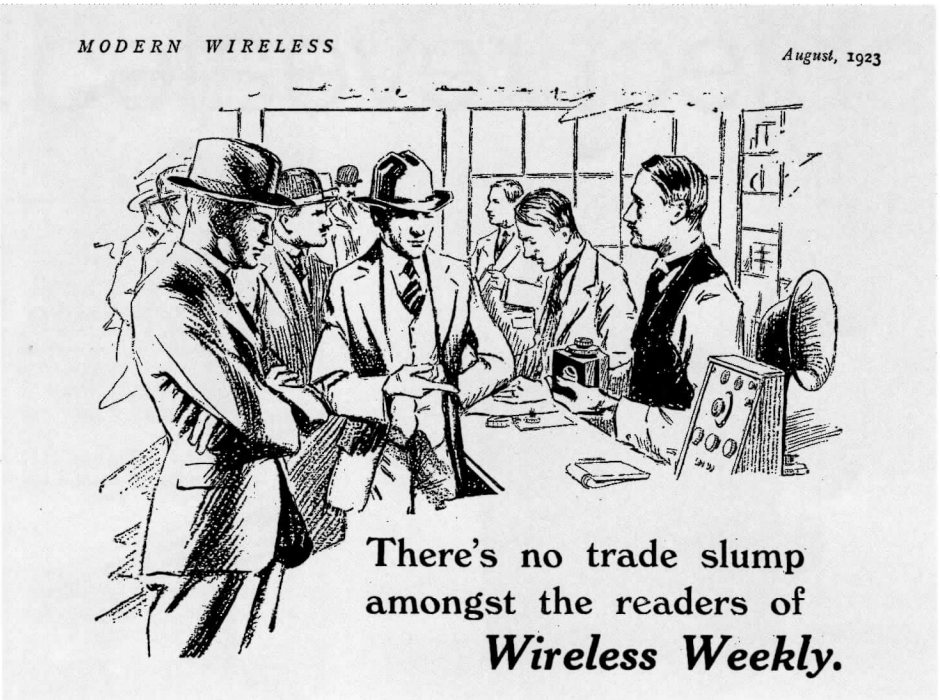
Using the (very enthusiastic) response by BVWS members as a basis of how many of these sets have survived, it would appear to be at least five.

The lucky (and prompt) winner of a year's free membership is Dennis Yates.

New mystery object

Here at BVWS Towers we are surrounded by the strange and the unusual. This object is no exception. It was manufactured by RM. Radio Ltd of London and if anyone can correctly guess what the object below is please contact the Editor through the usual channels.

First person to correctly guess wins a year's free membership.



Well I never!

by Pat Leggatt

Among life's minor pleasures is rooting through old wireless magazines and books in search of the more unusual or eccentric titbits. Perhaps you may be entertained by some I have come across recently.

First I must make a plea for a return to the superior personal standards of the past, as depicted in the accompanying 1923 advertisement for Wireless Weekly, which describes the gentlemen as 'a splendid class of customer'. We don't see many at Harpenden dressed so elegantly, and I suspect that some of us do not even own a trilby, let alone a bowler hat.

Radio Eyes

Popular Wireless was always a good source of oddities, and they had a liking for the mystical possibilities of wireless. In August 1922 they ran an article entitled "Does the Eye 'Wireless'?" After mentioning reports that a lion may be held at bay by a steady gaze from the human eye, the writer recounts his experiments in which he looked into a lady's eyes for a few moments and then switched off the lights. He repeated this several times, and again with a different lady, and 'curiously enough' both ladies guessed wrongly every time as to whether or not he had moved his eyes while in darkness. It is difficult to know what conclusion we can draw from this, apart from admiring his success in persuading ladies to take part in peculiar experiments in the dark!

The writer goes on to tell us of experiments by a Dr Russ in which he was able to deflect a delicately suspended coil through 30 degrees by directing his gaze at one end of it; and the article concludes with the thought that wireless may some day be associated with such phenomena.

My Set's Gone Dead!

Another article in the same issue of PW opens with the question 'Will wireless constitute a means of communication with the departed?'. A well-known spiritualist is quoted as believing that 'wireless is going to be of assistance in this respect', based on the theory that spirits are 'vibrations of the ether'.

The writer of the article says 'There is no present means of judging as to whether electromagnetic waves would constitute the means of such communications, or whether some other form of wireless apparatus, capable of transmitting and receiving other vibrations, such as those of telepathy, would need to be evolved'. He outlines at some length various aspects of spiritualism and telepathy and concludes with one more question 'Are we to imagine invisible wireless transmitting and receiving sets in spirit land?'. Well, now in our day we have circuits providing a 'virtual earth', so perhaps we're on our way!

Early Mains Sets

Nothing very odd here you may think, but what is in mind is sets run off the **gas** main, rather than from the electricity supply. Again, Popular Wireless supplies the inspiration in their August 1926 issue, describing a gas-powered detector. Fix two copper wires, their ends about a quarter of an inch apart, just above the blue conical part of the flame from a Bunsen burner; connect this in place of the crystal in a crystal set and you will obtain very clear signals. To be fair, PW do say that this is an interesting experiment rather than something to be built in to your set. The idea of this flame detector actually originated with Lee de Forest twenty years earlier in 1906.

If now you want to add more oomph to your gas-powered set, you could use Horton's flame amplifier. Here a Bunsen burner flame was directed between two metal plates inclined at an angle to one another: the plates were connected in a series circuit with battery and headphones, and ionisation in the flame allowed a current to flow. The signal input was fed to a solenoid acting on an iron diaphragm, past which the burner gas supply flowed. As the diaphragm moved, so the gas pressure changed and the burner flame rose and fell. When the flame rose it entered more into the narrower part of the gap between the plates and increased the current in the headphone circuit: and vice versa, so the headphone current was modulated by the signal and appreciable amplification was obtained. But don't ask me what the signal-to-noise ratio was like!

Has Anyone Got One of These?

In October 1923, PW included a short paragraph saying they had heard of 'an attachment which increases so enormously the sensitiveness of the receiver that by its means 2LO has been clearly heard in Bombay, 6000 miles away'. This was said to be the invention of Mr Sutherland of the Marconi Company, but no details were given. Perhaps it was used in the super-sensitive 1-valve set advertised by the Climax Engineering Company in *Modern Wireless* of May 1923, which they said 'has absolutely no equal in the world and renders multi-valve sets obsolete, expensive anachronisms'. Does one sense a tiny hint of exaggeration here?

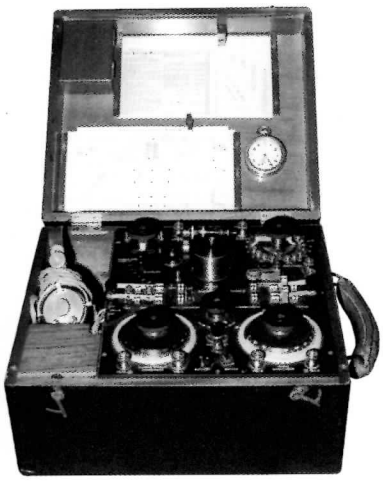
In August 1928, PW featured a French product for automatic grid bias, consisting of a small glass tube divided into five compartments filled with a special electrolyte: fine gold electrode wires internally connected the five cells in series. The device was to be wired in place of the normal grid bias battery, and it was claimed that the bias voltage produced would automatically adjust itself to the optimum value as the HT applied to the valves was varied. PW were never ones to bother themselves with technical details, and they failed to explain how variation of HT could cause a device in the grid circuit to adjust its voltage. Nevertheless they said that on test the device resulted in 'slightly stronger and certainly more pure signals'.

Talking of the French, you might think that the Eiffel Tower was always a valued landmark of Paris. But according to *The Wireless*

Magazine in 1926 it was planned to pull it down in 1914, and it was only saved from this because the French military wireless people requisitioned it during the first World War as a wireless station.

One Up To Popular Wireless

Not wanting always to be beastly to PW, I must mention their very sensible reply to a rather dumb correspondent. A reader wrote 'When I hang my telephones on the wall the diaphragms go rusty. How can I prevent that?'. Resisting any temptation to describe the effect as one more example of the mysterious actions of wireless waves, PW gave the eminently practical reply 'Obviously you should not hang them on the wall, but should discover a drier and safer place'.



A Useful Source of Bits and Pieces

A reader's letter to *Popular Wireless* in July 1922 says that he has recently purchased an ex-Government Mark III Tuner *(that's the much sought-after World War I military crystal set)* and asks how to convert it to valve operation. The magazine's reply says that handling valve circuits is too difficult for a beginner and advises him to dismantle the set and use the parts for something else. So at last I know what to do with that bit of old junk in my collection!

Modern Wireless's Turn

Modern Wireless was a cut above *Popular Wireless*, but its advertisements featured the occasional oddity. In August 1927, Igranic urged readers to 'Get more real music from your Radio Receiver and your Gramophone by using an Igranic-Pacent Phonovox'. This, they assured us, would give 'absolute fidelity of reproduction and give vocal and INSTRUMENTAL numbers a life-like clarity, VOLUME and roundness of TONE'. There was no clue as to the nature of this wonderful unit; we were simply encouraged to 'Write today for full particulars'.

In May 1923, *Modern Wireless* carried an advertisement for The Broadcaster magazine headlined 'The Crystal Menace'. They declared that certain crystal sets could interfere with reception and transmission and annoy other listeners-in. 'But it is possible to avoid this interference, so get the May *Broadcaster*, just out'.

Oh dear, my Detector's boiled over!

Turning to valves, *Modern Wireless* of April 1923 gave a good description of a radically new form of detector valve developed in 1922 by Harold Donle in the United States. It was remarkable in that the anode was a pool of liquid sodium, kept suitably warm by a heating element on the outside of the glass bulb.

The valve was claimed to be as sensitive a detector as a conventional triode with reaction, but could cause no interference since it was not capable of oscillating. The sensitivity arose by working on very steep kinks in the anode characteristic caused by the presence of sodium ions.

Later valves from Harold Donle containing sodium vapour (not liquid) were known as 'Sodions', but the original one described was not given this name and never went into commercial production.

Are You taking treatment for your Enaemics?

Modern Wireless of February 1923 carried a useful advertisement for Filtrons Variable Grid Leak, telling us that it would eliminate ENAEMICS and DISTORTION. They went on to say that 'Refinement in the reception of Radio Telephony necessitates extreme critical control of the Grid potential. The accumulations of electrons on the grid must be definitely filtered away in precise Syncopation with the input modulations to ensure purity of conversion from Radio to Audio frequency. You will be astounded by the improvement'.

Syncopation was all the rage in 1920s dance music, so of course the electrons had to be filtered accordingly.

Using the Microwave

You may think the microwave oven is very much a domestic utility of recent years; but Amateur Wireless in 1928 reported that Dr Sheard in the United States fried sausages by passing them through short waves between 6 and 10 metres. There was no end to the ingenuity of the early Hams!

Early Loewe Ideas

Many readers will know of the Loewe 3NF valve with three triodes in a common glass envelope, together with the necessary inter-stage coupling resistors and condensers.

A disadvantage of these multiple valves is that if one of the three filaments goes open circuit then the whole valve is useless. The inventor, Dr Siegmund Loewe, was evidently conscious of this and in 1925 — prior to commercial production of the valves in 1926 — patented ideas for making do with only one filament.

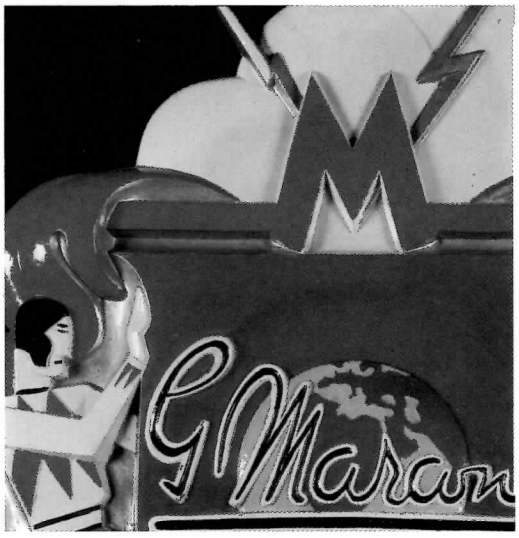
The third triode in the 3NF is an output valve with a sizeable filament to give the necessary emission. The first two valves, on the other hand, are high-impedance voltage amplifiers drawing very little anode current. Loewe's proposal was to use cold photo-electric cathodes for these first two stages, excited by the light and/or heat from the third valve filament. An alternative idea was to deflect into the first two valves, by suitably situated potentials, a small fraction of the electron emission from the third valve filament.

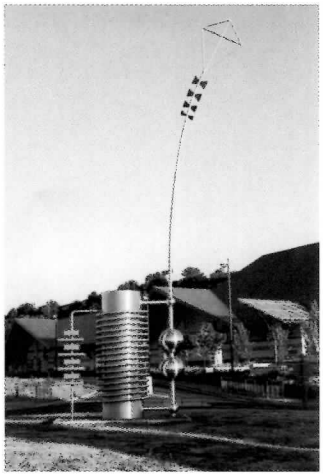
Ingenious though these ideas were, Loewe valves were never in fact marketed without separate filaments for each triode — or separate indirectly heated cathodes in later mains versions.

The Fotoliptofono

Finally a little item from South America, as a change from the U.S.A. In 1935 the Argentinian company Sociedad Fundadora Fotoliptono announced the Fotoliptofono, a radiogram playing optical records rather than shellac discs.

Borrowing a technique from the film industry, the records were printed as variable-area optical tracks on 20" by 15" paper sheets. The sheets were wrapped round a rotating drum and read by reflection of a scanning light spot. Claimed advantages were the low cost of the records, and absence of needle scratch or hiss. But as witnessed by the Electrical Times, the device was demonstrated by playing through a very old American wireless set and the tone was distinctly poor. This, together with the rather fiddly adjustments needed to align the scanning spot with the recorded tracks, brought the *Electrical Times* to the conclusion that the apparatus was not yet a commercial proposition; and indeed no more seems to have been heard of it. But it surely deserves a place in history for its name alone.





Marconi sculpture in Pernarth

by John Rackham

The sculpture shown on the left has been erected outside the Tesco superstore in Penarth, a few miles from the spot where Guglielmo Marconi and George Kemp transmitted wireless messages across water between Lavernock Point and Flat Holm island on May the eleventh 1897.

According to an article in the local press, the stainless steel sculpture is based on drawings of the original equipment and cost £40,000; It was funded by Tesco's and the Cardiff Bay Development Corporation and is 40 feet high. At Lavernock Point itself there is a plaque set into a church wall to commemorate the transmission.

Direct Action Tuning

by Geoffrey Dixon-Nuttall

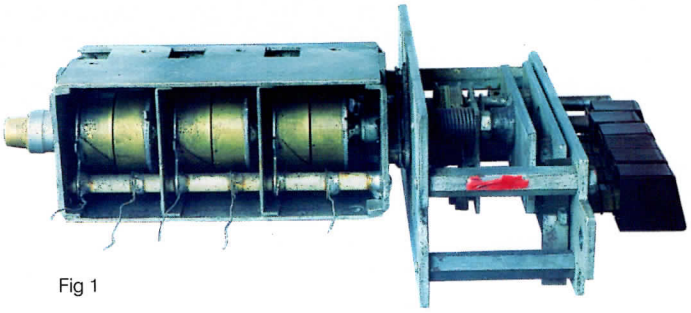


Fig 1

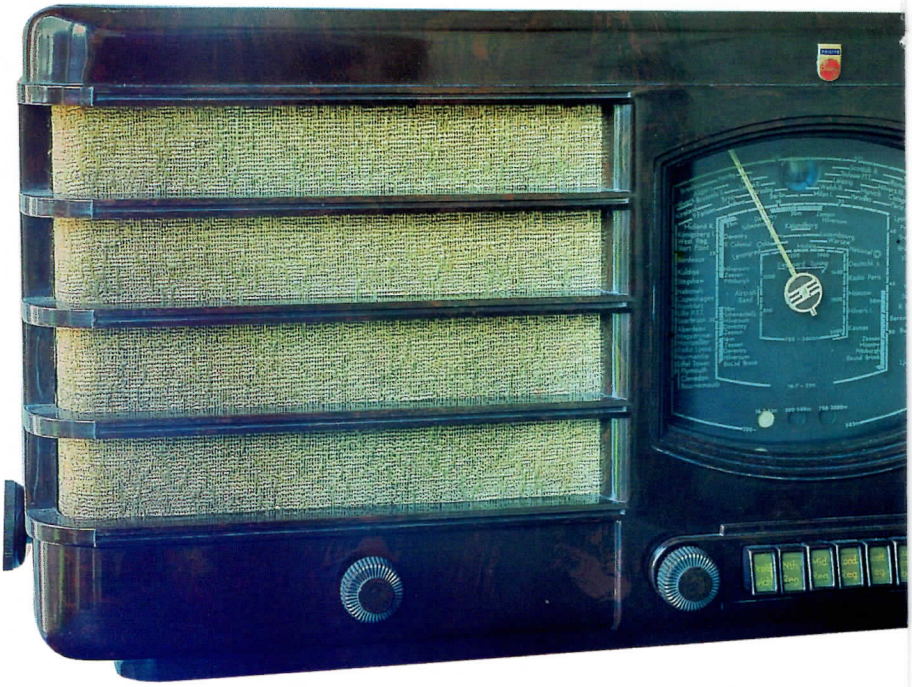


Fig 2

Fig 3

In 1938 there was a sudden outbreak of enthusiasm for press-button tuning. Some manufacturers were taken by surprise, and had to hurriedly add buttons to their usual chassis. Most either added a ready-made mechanical unit (usually from the States) or went in for switched coils and/or trimmers. These tended to drift.

Philips had obviously been thinking about this for some time, and when the 1938 models were launched it was seen that they had not one, but two separate systems. One was a clever, and completely original, motor tuning system, which worked very well, but the other was even more unusual. This was christened 'Direct Tuning', and is what we are concerned with.

One of the problems with press-buttons is that they move in a straight line, whereas the tuning capacitor rotates. The obvious answer, they thought, was to make a tuning capacitor that slid.

What they designed is a most amazing device. It consists of a cylindrical coil of brass shim which moves inside another one. The clever thing is the tiny clearances that they achieved; I have never dared to measure them, but it looks like a very few thou. To maintain this in production was quite a feat, and I would like to know how they managed it.

The whole affair is about 30mm in diameter, and the movement is 10mm. In this they managed to get a change of 480 pf, which is very reasonable. An incidental advantage of this construction is that the microphony is very low, as the capacitor is very small and very rigid. In practice the capacitors are three-gang.

This makes the actual mechanism very simple, and the manual tuning arrangements are also quite easy; you just arrange for a screw to push the thing along. There are, however, one or two snags.

The first one is that the capacitor has a straight line capacity law, so that the stations tend to crowd into the high frequency end of the dial. This entails using a non linear dial drive, which is arranged by having a cord pull against a spring-loaded drum, which is offcentre. This means that the press buttons cannot move the pointer round, as it would get left behind and the cord would derail; so the pointer is used on the manual tuning position only. Another snag occurs when changing from manual to buttons, as the cord is still wound, and there is no way of returning the capacitor to zero.

This means that when it is desired to use preset tuning the pointer has to be wound

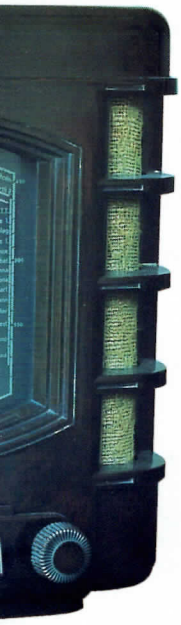


Fig 4

Fig 1: A direct action tuning unit
Fig 2: Philips 555A
Fig 3: Philips 660A
Fig 4: Philips 855X
Fig 5: Philips 735A
Fig 6: Philips 680A

Fig 5

Fig 6

continued on page 29

Confessions of a cartologist part VI

The Wireless art of Donald McGill

by Willem Hackmann

Fig 1

Fig 2

Fig 3

Fig 4

Fig 5

Fig 6

Fig 7

Fig 8

Fig 9

Fig 10

Fig 11

Fig 12

Figs 1 - 3 McGill's version of the V2. They are respectively Inter-Art nos 4681, 4428 (posted on 14 August 1923), and 4858.
Fig 4 McGill's only known version of a crystal set. Inter-Art no. 4314, posted on 28 July 1923.
Fig. 5 Single valver with Marconiphone style sliding controls. Inter-Art no. 4497, posted 14 July 1924.
Fig 6 - 7 Two identical two valve sets. Inter-Art nos 4496 (posted 21 May 1924), and 4500.
Fig 8 Flat-topped set of the Burndept type. Inter-Art no. 5086, posted 9 July 1925.
Figs 9 - 10 Identical sloping front sets with mahogany tops for headphones only. Woolstone Milton no. 12 77 (posted 4 Aug 1925), and Inter-Art no. 5274 (posted 29 Sept 1926).
Figs 11 - 12 Almost identical two-valve sloping front sets with mahogany top and horn speaker. Inter-Art nos 5285 (posted on 29 Sept 1927), and 5736.

If there is one artist associated with the comic postcard it is Donald Fraser Gould McGill, the 'king of the saucy postcard', born in 1875. He must have brightened up many a rain-soaked sea side holiday in the twenties and thirties! Millions of postcard reproductions were sold of his colour-washed drawings made between the years 1904 and the mid-1960s. He had a wide following in every strata of society. His art achieved a measure of respectability thanks to a well known essay by George Orwell 'The Art of Donald McGill', published in the magazine Horizon in 1941, which gave some colour to the gloom of the war years. Orwell characterized McGill's jokes as 'a chorus of raspberries'. No topic was safe from his acute observations and sharp pencil. His comic art has become instantly recognizable, and has had many imitators over the years. These days he is very collectable and most cartologists will have, at least, a couple of his cards in their collections. I know of three enthusiasts who specialize in his work and have between 4,000 and 8,500 of his post cards each! The largest publishers of his cards were Inter-Art (International Art Co., referred to in Part V of this series), with a suggested output of 3,670, by far the largest number in their popular 'COMIQUE' series. Those with a wireless (and television) theme are listed in item 1 of the Appendix.

Donald McGill's comic cards in their spontaneity give us a wonderful insight into the social mores and attitudes when they were drawn. Nothing escaped his wit, from passing fads and fashions to the consequences of war, unemployment, or government policies. His comic cards often caught the public mood. It is therefore no surprise that he was also inspired by the latest technologies, from the motor car, the aeroplane, the latest home appliances such as the electric washing machine (this makes me think of a comic card of the early thirties of a startled husband reading a slogan in a shop window displaying the latest electrical goods: 'Don't kill your wife! Let your washing machine do the dirty work.' - alas, not by McGill.), to electrical communication devices (the cable telegraph, telephone, wireless, and eventually television) which have shaped our modern world.

Among McGill's earliest postcards are those reproducing the telegram form with a saucy message of the kind: 'Returning home tomorrow. Bringing mother with me to stay. Maria' and the caption 'I've backed a loser this time!', or with the caption: 'If it was a boy my wife promised to wire me: "Gent's bike arrived". And if it was a girl: "Lady's bike arrived." But this is the wire I got!!' (and then on the telegram form): 'Tandem arrived. Wifie'. He produced about twenty on the telegram theme and also about the same number of a similar nature on the telephone.

The number of postcards he produced on wireless and television themes are a very small percentage of his total output. After quite a few years of collecting I have come to the conclusion that he did perhaps fifty such cards of which I have seen about forty different ones. I have listed all the cards of which I have details in the Appendix, and twenty eight are reproduced here. They date roughly from the birth of public broadcasting in this country in the early twenties to the mid sixties when he drew a few cards on the 'consequences' of television (Figs 26 - 28), with such standard gags as "Why have you never bought a Television like Mr. Wilkins?" asks a plaintive wife who has just given birth to quadruplets (Fig. 27). Incidentally, this is also my most recently franked card having been posted from Broadstairs in Kent on 18 July 1968.

I have identified six publishers of his 'wireless cards'. They are listed in the Appendix. The most prolific from the twenties was undoubtedly Inter-Art Co (Appendix, item 1), to whom he was contracted from 1914 until 1931. He drew cards for their 'COMIQUE' series, including his contributions to the long-running 'LISTENIN!' series which I discussed in Part V. They contain such standard gags as the drunk holding to his ear the drinking cup of a public fountain: "Big Ben's clear as anything - an's only a crystal set!". Big Ben is, of course, booming in the background (Fig. 25). The inspiration of this gag is of a similar drunk on earlier cards (not by McGill) attempting to telephone his wife from a drinking fountain! Aerials, too, were a butt for fun: "You've got them clothes lines a bit too 'igh Sir!!" says the charlady to her horrified employer hanging the washing on his aerial. This card is listed in the Appendix under item 2 as it was published by Woolstone Bros in their 'Milton' Comic Series. I have suggested in Part V that Inter-Art and Woolstone Bros must have had some arrangement as both firms published these cards at the same time. This scenario is also suggested by the overlapping dates that appear on the posted cards. Elfreda Buckland in her book *The World of Donald McGill* (Blandford, 1984) confirms the complications associated with McGill's publishers. He was chiefly involved with Robert McCrumb of Inter-Art Co. and Joseph Ascher of D. Constance Ltd, and had short-lived relationships with Max Honnest (of the Pictorial Postcard Co.) and Hutson Brothers (often identified by initials 'H.B.'). Many of McGill's pre-broadcasting 'telegram postcards' were published by Ascher (with 'A' numbers on the back) and Max Honnest (with 'ES' numbers on the back).

The other three publishers of his 'wireless postcards' listed in the Appendix are Bamforth USA. (item 3) which joined up with Inter-Art, the anonymous XL Series (item 4) which cannot be linked to any known named company, Ascher's D. Constance Ltd (item 5), and an anonymous publisher (item 6). McGill had a 'gentleman's agreement' with D. Constance Ltd from 1936 until 1952, and a written contract with the same firm for sketches, with a small salary for administrative duties from 1952 until 1962. It really is quite difficult to date McGill's cards by the various imprints that appear on the back. One of the main McGill collectors has identified no less than nine varieties of imprint for the years 1935 to 1965.

Let's take a closer look at the post cards illustrated! The majority of his cards of our *genre* have a wireless set of some sort or another. Judging by his portrayal of human emotions, besides being a skilled craftsman he was an accurate observer. The only set that can be clearly identified is the Marconiphone V2 in his earliest wireless cards (Figs 1 - 3), apart from the slightly oddly drawn lid in the first two. Figure 3 is one of the few unsigned McGill cards in my collection, but I am assured that it was drawn by him. I would not be at all surprised if he owned this set. He certainly used his two daughters as models in some of his cartoons. It would be nice to think that one of them is listening to the V2 in Fig. 1, although by then they would have been twenty one and eighteen years respectively! His other sets cannot be identified with any certainty. In fact, several are obviously 'identikit' radios borrowing features from popular sets of the time. I can sympathize with the predicament of the chap in Fig. 4 which features the only crystal set in McGill's cards. The make? Well it could be his version of the Western Electric Model 44001 with or without the 'Weconomy' amplifier, but who is to know? This card was posted in July 1923. What is unusual is that the box has panelled rather than flush sides- perhaps a bit of McGill's artistic licence? A charming series featuring infants and radios is represented by Figs 5 - 7. The boy who is keener to concentrate on 'listening in' than on the charming girl in Fig. 5 has a single valver with sliding controls similar to those of the contemporary Marconiphones, but it certainly is not a V1! As for the other set-depicted in Figs 6 and 7 from 1924, well one candidate could be the Cosmos 'Radiophone', but I am sure that we can all think of a favourite.

The next illustration (Fig. 8), posted in 1925, could be of a Burndept, while in Figs 9 to 12 McGill has drawn two slightly different sloping front sets with ebonite panels and mahogany tops still typical of the time when these cards were posted (between 1925 and 1927). By 1930 the wireless and horn speaker depicted in Fig. 14 (the card was posted in that year) must be getting a little old fashioned. McGill's last flat-topped sets with horn speakers are-illustrated as small vignettes in Figs 15 and 16, posted in 1929 and 1930. The drunk mistaking the noise of the cat for a nightingale in Fig. 17 has obviously moved with the time and has purchased a typically early thirties receiver, while the dog in Fig. 18 is listening to a mid-thirties set which reminds me somewhat of a Murphy. The wireless is placed on a table with twisted barley legs very similar to the table used in Fig. 14. Could this picture be based on the set owned by McGill in the mid thirties? A portable set used by the jolly sunbather in Fig. 20 cannot be identified. This card was posted in July 1935. Three other mid thirties receivers feature in Figs 19, 21 and 22. McGill is obviously keeping up with the times as all these models are now run from the mains. The regular trip to the local garage or cycle shop to have the radio's accumulator re-charged (Fig. 13) is becoming a relic from the past. This card was posted in 1931.

The last two sets featured in my McGill cards date from the late thirties. The least said about the gag of Fig. 23 the better, although according to the rubber stamp on the back, it was passed by the 'Blackpool Post Card Censorship Board'. This relates to an interesting episode in social history. In the fifties and sixties local censorship committees were set up in some of the major seaside resorts such as Blackpool, Margate, Hastings, Cleethorpes and Brighton to vet the proverbial 'dirty postcard' to prevent the publication of obscene matter. Opinion of what was considered obscene varied widely. One censor expressed the view that vicars were not a suitable subject for saucy postcards. McGill's haricot beans card obviously passed muster! Turning quickly to Fig. 24, could this be a Murphy? 'Workers' Playtime' and 'Housewives' Choice' were both popular programmes at the time. The final three postcards (Figs 26 - 28) herald in the era of television. The gags are getting more *risqué* but the sexual innuendo of Fig. 26 is pretty mild by contemporary standards!

'The Ace of Cards' McGill, died in 1962, aged 87. A commemorative blue plaque now identifies the house in Blackheath (Greater London) where he lived from 1931 untill 1939. During his life he saw the rise and fall of the

Fig 13

Fig 14

Fig 15

Fig 16

Fig 17

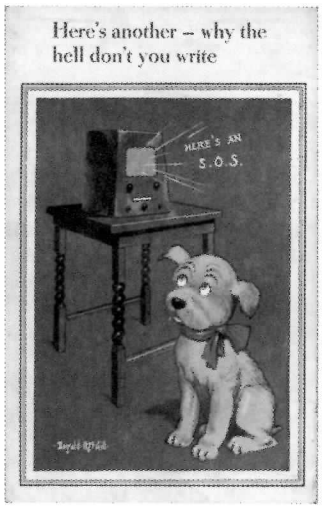


Fig 18

Fig 19

Fig 20

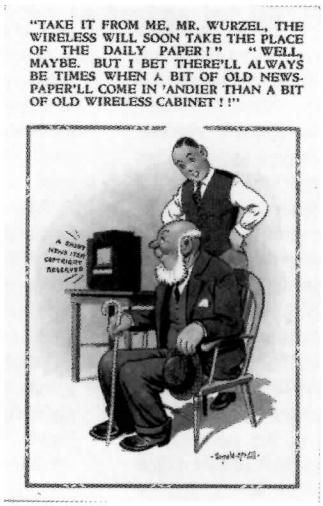


Fig 21

Fig 22

Fig 23

comic postcard. I hope that you've enjoyed his 'wireless cards' as much as his saucy postcards gave pleasure to generations of holiday makers. His unpretentious and unself-conscious drawings give us insights into his times. At first glance his wireless sets may appear more accurately drawn than they were in reality, but he has certainly captured the spirit of the first decades of public broadcasting, embroidering his gags around this medium.

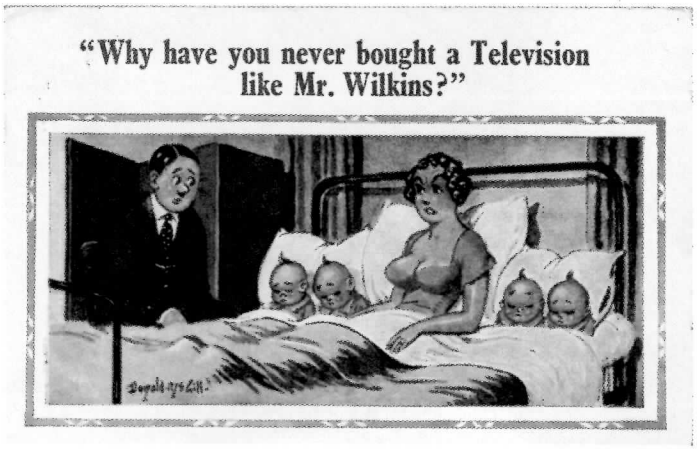
Fig 13 Getting the accumulator charged. Woolstone Milton no. 811, posted 18 Sept 1931.
Fig 14 Wireless with tuning scale and horn. Inter-Art no. 6973, posted 5 Aug 1930.
Figs 15 - 16 Last of the flat-topped sets with horn speakers. Inter-Art no. 6592 (posted 10 Nov. 1930), and Bamforth, USA, no. 1929.
Fig 17 Typical early thirties receiver. XL no. 2013.
Fig 18 Typical mid-thirties set with narrow slit tuning scale. Only identifying mark is its no. 99.
Fig 19 Rough treatment to the same set! New Donald McGill no. 1442.
Fig 20 Mid thirties portable on the beach. XL no. 2051, posted 19 July 1935.
Fig 21 - 22 Two mid thirties receivers. New Donald McGill nos 1420 and 2089.
Figs 23 - 24 Two late thirties floor-standing sets. New Donald McGill nos 1769 (with censor approved stamp), and 1795.
Fig 25 An old gag! Inter-Art no. 5087, posted 16 Aug 1926.
Fig 26 A midfifties television set. The gags are getting more risqué! New Donald McGill no. 1870.
Fig 27 The consequences of not having television by the mid fifties. New Donald McGill no. 2127, posted 16 July 1968
Fig 28 A gag based on a well-known television series. New Donald McGill no. 2241

Fig 24

Fig 25

Fig 26

Fig 28



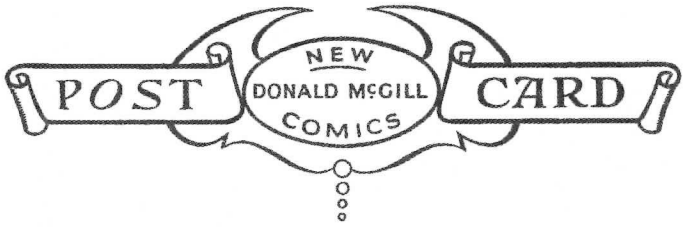


Fig 27

Appendix: Donald McGill's Comic Wireless and Television Postcards Those numbers marked by an * have been seen with either Inter-Art and Milton imprints.

1 **'COMIQUE' Series** of Inter-Art Co., Florence House, Barnes, London, S.W.

"We're busy - "listening in!" (1/9/25) 4273

S.O.S. L.S.D. R.S.V.P. (28/7/23) 4314

"Wireless." Telegraphie sans fil. *4315

I am sending you ten shillings - next week---
by WIRELESS. (14/8/23) *4428

His "bed-time" story! (21/5/24) 4496

What is your wave length? (14/7/24) 4497

T.S.F version (dated 25/1/32) 4497

Signal de détresse! (T.S.F. version) 4498

I've got a good headpiece! (23/9/23) 4500

T.S.F version (June-July 24) 4500

We've got a couple of loudspeakers! (10/8/23) 4501

I hope you're "listening in" to-day
Because you see I want to say;
Best wishes for your Birthday, dear,
And happy days all through the year. 4681

T.S.F. version 4681

Belgian version made from stamps

Broadcasting! 4845

"George Henry! I don't believe you're listening!"
"Yes, my dear, I'm listening-in." (unsigned) 4858

LISTENIN'! Series

"In two minutes you will receive the local news!--
Stand by please -- there is no local news!" (9/7/25) 5086

T. S.F. version 5086

"Big Ben's clear as anything -
an's only a crystal set!" (16/8/?) 5087

"I popped in to Smith's to hear his wireless, but
something's gone wrong with his valves!"
"How awful! Has he seen a Doctor?" 5120

Husband calling! "Close down!" *5268

Wife calling! "Close down,
I'm not coming home yet!" (29/9/26) 5274

"Crosswords" Series
"What with crosswords and wireless,
I've no time for lessons!" (2917127) 5285

XMAS GREETING. "Peace on Earth and Mercy mild
My old woman will be wild!" 5736

It's just the best news I could hear.. (10/11/30) 6592

"How do you know you've got Aberdeen?"
"I can hear a chap singing -
"The best things in life are free!" (5/8/30) 6973

Steam is superseded, etc. 7125

2 **'Milton' Comic Series**
by Woolstone Bros, London, E.C.

I am sending you ten shillings -
next week---by WIRELESS. (14/8/23) *289

'LISTENIN'! Series

"You've got them clothes lines a bit too 'igh Sir!!" 629

"Wireless." Telegraphie sans fil. *251

"When I got home last night I got New York!"
"When I got home last night I got H--l!" (18/9/31) 811

Husband calling! "Close down
I'm not ready for home yet!"
'Blackpool' overprinting (518125) *277

3 **Bamforth Co.**, Mohegan Lake, N.Y. Printed in U.S.A.

Some folk write in Pencil.., in 'WHY NOT WRITE' 1929

4 **XL Series**, London, E.C.

"Sh-sh-sh! Don't make a noise -
they're jusht broadcasting the nightingale!" 2013

'I like work, but not this week, thank you!' (19/7/35) 2051

5 **New Donald McGill Comics'** Series of D. Constance Ltd., 22 Christ Church Rd., London S.W.2. Sole publishers of all **new** Donald McGill Comics. Copyright. Printed in Great Britain.

"Take it from me, Mr. Wurzel, the wireless will soon take the place of the daily paper!" "Well, maybe, but I bet there'll always be times when a bit of old newspaper'll come in 'andier than a bit of old wireless cabinet! !" 1420

"I don't care if you do disagree with the referee's decisions, you're not going to throw bottles at the radio!" 1442

Haricot beans for dinner again! 1769

"We were listening quietly to the wireless when he jumped up and kissed me - between the Workers' Playtime and the Housewives Choice!" 1795

"I wish you wouldn't twiddle the knob, George, just when things are getting exciting!" (TV) 1870

"Who are they speaking about,
George, I didn't catch her name?" 2089

"Why have you never bought a Television
like Mr. Wilkins?" (18/7/68) 2127

"Wake me up if anything exciting happens!" 2193

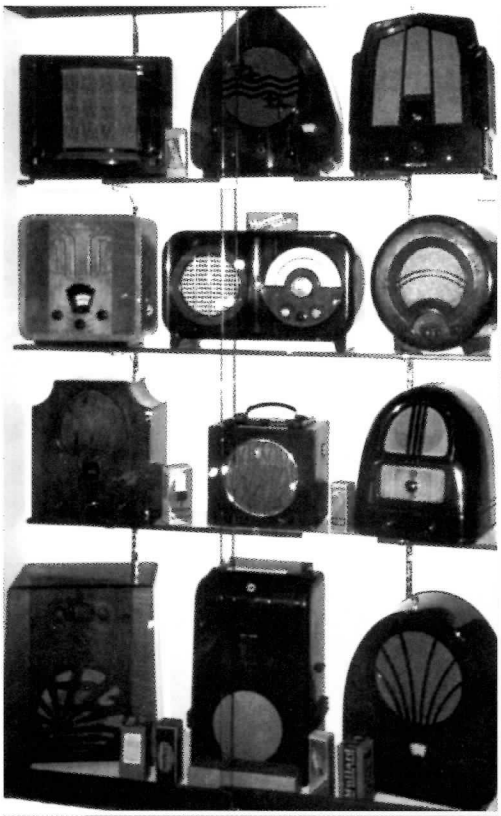
"I bet the BBC would never have her on
'What's My Line! '" (TV) 2241

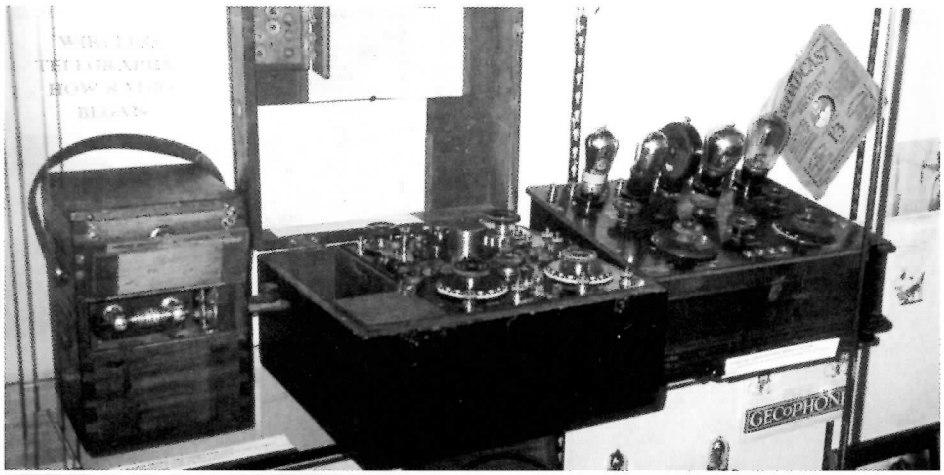
6. Anonymous publisher.

Here's another - why the hell don't you write. 99

Next to come: Wireless and the Advertising Postcard.

Radio days at Farnham





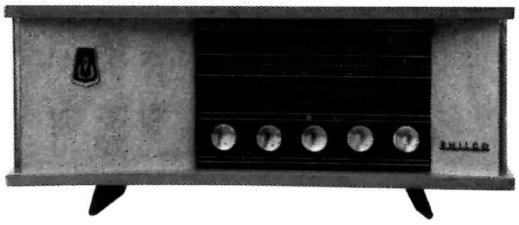
The Museum of Farnham has been holding a wireless exhibition entitled 'Radio Days'. The exhibition covers the history of communication from 1852 (using a single needle telegraph to illustrate communication before Marconi changed the world forever) right up to the heady days of the sixties (depicted by the ubiqitous transistor radio). The exhibition was organised by Geoffrey-Dixon-Nuttall, Pat Leggatt and Ken Tythacott. The display was selected to show the influence of wireless communication in a social and cultural context rather than a technical history.

The high point of the exhibition was during 'Science Week' in Surrey; where large numbers of schoolchildren and art students from the nearby art college were able to see the display for themselves.

Geoffrey, Pat and Ken also had to give talks about some of the various aspects of wireless and its impact upon the modern world. The exhibition ran from January to mid—May.

The Amateur Repairer II

by Tony Voysey



Philco 100 AM/FM, AC/DC Radio

This set was one of the first I acquired and had always had the same problem: distortion on VHF when tuned for maximum gain. To use at all, the set had to be tuned either side of maximum gain and even then drifted. AM reception was good.

It may be appropriate at this point to say a few words about AC/DC sets. These should always be connected to the mains with the neutral wire to chassis. If reversed the chassis will be 'live' so before ever attempting repairs always ensure that there is continuity between the neutral pin of the mains plug and the chassis. This can be done using a multimeter on low resistance range with the set switched on but *disconnected from the mains.* A zero reading should be obtained. Do not rely on the colour coding of the mains lead. I recently tested all of my AC/DC sets and one gave continuity between the colour-coded 'live' wire and chassis. On removing the back cover of the set to investigate I found a note stuck to it saying 'polarity reversed at switch'. Because of this possible danger it may sometimes be puzzling when trying to remove control knobs for chassis removal. If the knobs are fitted with grub screws the screws should go deep into the hole which is then filled with wax for insulation. This wax will have to be removed to gain access to the screws. The knobs on the Philco are a simple push-fit however.

As an amateur I find faults like the one on this set more difficult to cure than 'breakdown' faults because one has nothing to 'home-in' on. FM sets have a double-triode valve usually housed in a screen on top of the FM tuner unit. I always refer to this as the 'VHF valve', probably incorrectly, and I first suspected this. It was replaced with a spare after the valve holder was sprayed with switch cleaner. This evaporates quickly and leaves no residue. Do not use WD 40, or equivalent, as this leaves a conducting film. There was, however, no improvement. The built-in FM aerial was then inspected, but, apart from an original poor connection, was not the culprit. I will not elaborate on further fruitless attempts over the years (5-plus!) when something read in a book seemed worth a try. The set never made it to the loft as, after all, the AM side of it was working well. I eventually found reference in a book to the function of the AM frequency changer valve when switched to FM. This in itself was of little interest to the amateur except that by changing function on FM a fault possibility, which may affect FM only, was emerging. The valve was changed and normal reception resumed.

A complete lack of FM reception on another AM/FM set, the Grundig 'Hastings' model (see Fig.767) was cured by simply plugging in the appropriate 'VHF valve' into the empty valve holder found on inspection!

One interesting thing that occurred subsequently when the Philco was operated in situ was that I received Radio 2 reception on Radio 1 frequencies! 'In situ' in this case, because of a shortage of storage space, was on top of a cupboard with a tin horn from a gramophone placed on top of the set. Somehow the horn was causing an exact frequency shift of Radio 2 reception onto Radio 1 frequencies. I tried another FM set in the meantime and this was normal. When the horn was removed normal service was resumed. I would be grateful for an explanation of this phenomenon. It was fortunate I detected this at the time rather than start another 5 year investigation!

Hacker Mayflower II FM Radio

This VHF-only set from the latter days of the valve era is a particular favourite of mine for FM listening. Its appearance is unimpressive, being housed in a rectangular teak cabinet with mains/volume control on one side panel and tuning control on the other, There are controls for tone, sensitivity and A.F.C. at the back. the set has eight valves, two of which are duplicated, including a 'magic eye', with a metal rectifier. The reproduction is very good and powerful if required.

One Saturday afternoon I was listening to 'Jazz Record Requests' on Radio 3 when the set stopped working, produced a loud hum, started to smoke and gave a small 'pop' before I could isolate it. This looked very bad news to me. The chassis was removed and inspected. There were no apparent signs of burning but two capacitors attached to a terminal strip appeared overheated. These were removed and tested but appeared to be in order, so were subsequently replaced. Worst of all, a 125 ohm resistor was found lying in the base of the cabinet- had this been detached or was it left from a previous replacement? I cautiously plugged the set in and switched on but there was no smoking or output. I did not expect any output but had hoped to identify the smoking component(s). As nothing drastic was now happening I decided to leave the set switched on to trace the HT using my multimeter on the 1000v D.C. range with negative connected to chassis. I must point out at this stage that testing was carried out using one hand only and standing on non-conducting material. No HT could be found on the rectifier output so I assumed a burnt-out mains trans former and resorted to a ploy used before- put the set in the loft for spares!

Some time later I decided to retrieve the set from the loft and have another look at it. After all, I had not actually tested the mains transformer. Whilst dolefully looking at the 'deceased' I spotted a plastic fuse cover, on top of the chassis, which housed a 500mA fuse in the mains transformer secondary circuit. The fuse had blown, hence no HT, but it was not of standard size being short and fat. The fuseholder was modified and a standard 20mm fuse fitted. The set was switched on again- no smoke or sound but HT was now found on the rectifier output. However the second stage of the double can smoothing capacitor showed no HT. A replacement capacitor was found and wired in (see discharge precautions in first article) but this gave the same result. If you refer to the diagram in the first article, there must be a choke or resistor connected between the two smoothing capacitors. By visually tracing the wiring I could find no such component. Could this be where the 'rogue' resistor found in the cabinet came from? The resistor was retrieved and tested satisfactorily. The connection between the two capacitors was via a terminal strip and the resistor fitted exactly between the two adjacent tags so it was soldered into position after discharging the capacitors.

Caution now overcame me. I had hopefully restored HT and needed to identify the 'smoking' component(s). Switch on *briefly* and observe was my conclusion. This done, I was greeted by a loud hum and smoke coming from a capacitor adjacent to a resistor which was very hot. These components, a 270 ohm resistor and a 50uF/15V electrolytic capacitor, were connected in parallel to a pin on one of the two output valves (ECL 86). Reference to valve data books showed this to be a triode/pentode and the pin referred to was common to three parts of the valve- the cathode of the pentode, grid 3 and screen. The resistor and capacitor were removed and tested. The resistor had gone well above its nominal value and the capacitor had lost a wire during removal. Both were rejected and replaced with spares. At this stage I resisted switching on as the problem with these components was just as likely to be a result of the fault as the cause of it. That only left the valve itself as the problem but even then I resisted simple replacement. It occurred to me, in the absence of a valve tester, that there were two output valves (push-pull system) and that some reception should be obtainable on one. The suspect valve was removed, the set switched on and reception obtained. At this stage I felt confident in fitting a replacement second output valve and, this done, the set was restored to working order.

I did find continuity between the valve pin involved and the anode of the pentode when tested in situ but this was not confirmed with the valve removed from circuit. However, I assume that a short circuit in the valve caused a heavy flow of current which resulted in all the other problems, including melting the solder on the 125 ohm resistor, but this is amateur speculation.

I am sure that these articles will provide some amusement for the experts, but hope that some amateurs will be inspired to strive for the feeling of elation one experiences when successfully completing that first repair. I emphasise again the necessity of safe working practices- my 'switch on and see' method is not to be recommended without some idea of possible consequences. Better a 'dead' set than a dead amateur repairer.

Wireless Sets for the clock & Watch trade 1923/26

by David J. Boullin: Editor of Radio Time,
the journal devoted to the history and development of timekeepers controlled by radio.

A great deal has been written regarding the first wireless set specifically designed for the clock and watchmaking trades, the Horophone of 1913 and 1919.

The second version which was designed along conventional lines for crystal sets of the time, was described and illustrated in the Horological Journal (HJ) in 1919[1]. It was advertised from September 1919 to July 1920, but was never heard of again. No example has been found so far and Frank Hope Jones himself never expressed interest in a successor to the Horophone and he never pursued the commercial potentiality of wireless sets for the clock and watch trade. This is indeed surprising as in 1924 and 1925 Frank Hope-Jones, was not only President of the British Horological Institute (BHI), but also Chairman of the Radio Society of Great Britain and of course was the initiator of the renowned 6-dot seconds time signal or 'pips'.

This lack of interest by Hope-Jones in wireless sets for clockmakers seems to have led later historians and collectors to neglect the link between the wireless and horological industries, which certainly existed in strength, and there appears to have been no previous mention of the fact that the horological trade was very actively engaged in the production of wireless sets.

Four well-known manufacturers of clocks, Gent & Co of Leicester, the Telephone Manufacturing Company (TMC), Princeps Electric Clocks of Bond Street, London and Hirst Bros of Oldham all made complete wireless sets and amazingly Hirst Bros trade turnover of wireless sets in 1925/6 exceeded their turnover in respect of any other department: clocks or jewellery or even clock and watch materials (i.e. spare parts).

The first event linking the wireless and horological trades at this time seems to have been in regard to the advent of 'Summer Time' in 1923. On the 'eve' of 'Summer Time', on Saturday 21st April 1923, Hope-Jones, then Vice Chairman of the BHI and Chairman of the Radio Society of Great Britain, spoke from the London Broadcasting Station, 2LO, giving a 'summer time' reminder.[2]

What Hope-Jones had actually said in April 1923 did not come out until almost exactly one year later, when he reminisced on his remarks the year before[3]; he said:

I concluded my remarks by counting out the last five seconds before 10 p.m. The BBC have carried on ever since with ever increasing accuracy, finally bringing Big Ben and Greenwich into their service.

It is not only that watch and clockmakers benefit by the daily use of the Greenwich Time signals in their workshops, but their business benefits from the increased interest of their customers in the performance of their watches and clocks. You may take it from me that good watchmakers and jewellers welcome critical customers and that they hope to make us a 'watch proud' nation, as the Americans are reputed to be...

This latter statement was the prime stimulus for two things: first for wireless set makers to advertise wireless sets for the clock and watch trade and secondly for clock and watchmaking firms to actually make their own sets.

The courting of the horological trade by the

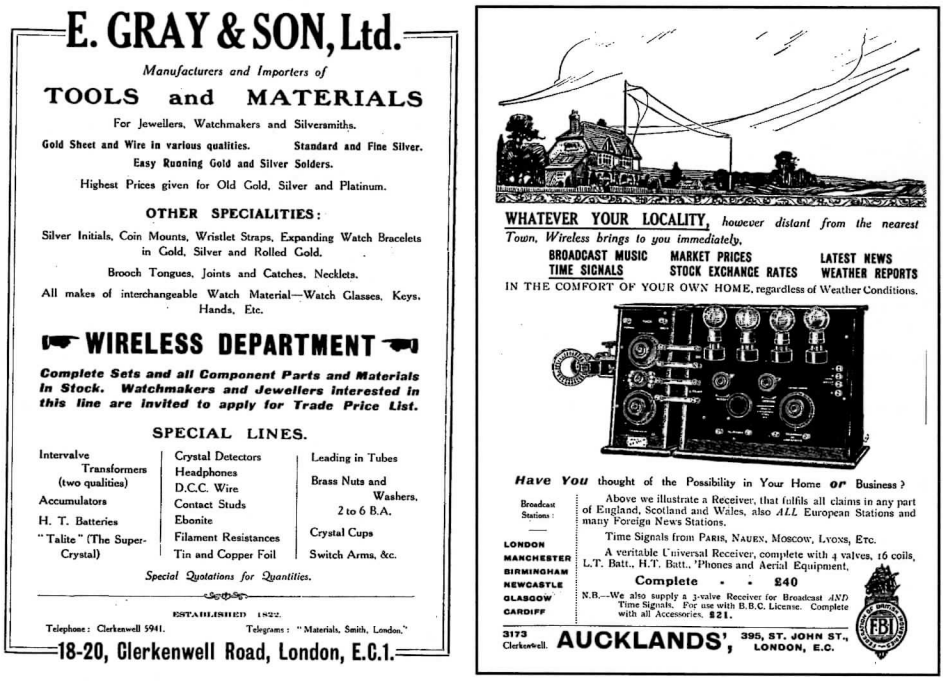
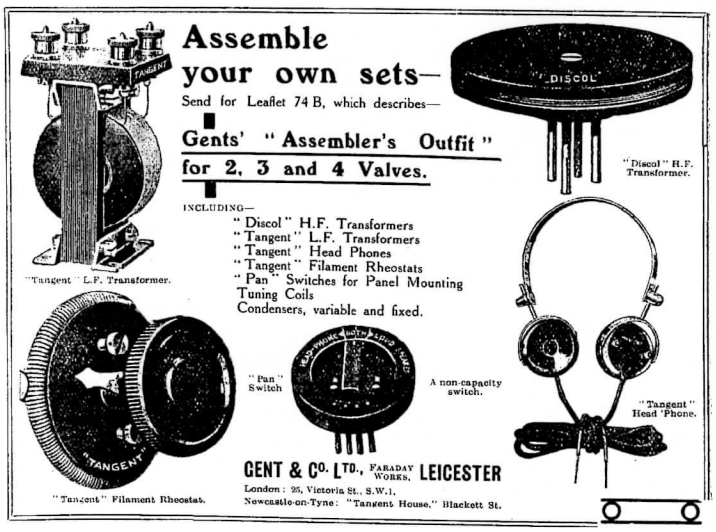


Figure 1, advertisements for wireless sets for the clock and watch trade in the *Horological Journal* 1923.

Figure 2, two advertisements by Gent & Co Ltd., left for components (February 1924); right for complete sets, called the 'Radiomatic' (April 1924). The firm was one of the best-known manufacturers of electric master clocks.



wireless trade began in 1923 and seems to have been associated with several factors:
1 the involvement of Hope-Jones in 'summer time' and precision recording of broadcast Greenwich Time Signals,

Figure 3 (left), a typical advertisement by Hirst Bros. August 1924. They made crystal, and one- to four-valve, the latter in a cabinet.

Figure 4 (top) the BBC approval stamp issued by the Post Master General.

2 advertising of wireless sets in the HJ,
3 the formation of the British Broadcasting Company, the 'BBC' (from 1927 the British Broadcasting Corporation).

The firm of Aucklands, 395, St John Street in Clerkenwell, London EC1 first came to the attention of the clock and watchmaking trades in March 1923, in fact just one month before the advent of 'summer time' in 1923.

This company was previously unknown to horologists as they had not advertised in the HJ before. They took a full-page advert, which never varied, and from June 1923 this appeared opposite another full-page advertisement that of the well-known materials dealers E. Gray and Son... who had never advertised wireless sets before (figure 2).

Whereas Auckland's offered complete sets for the horrific prices of £40 and £21[4], Grays were much more realistic in their approach, only selling parts to make up wireless sets: the components offered were all geared to the construction of crystal sets, which often retailed for ten shillings (50p)[5]. A crystal set was quite adequate to pick up the Eiffel Tower signals directly, and would also serve for the BBC programmes with Greenwich Time Signals.

Other firms jumped onto this 'bandwagon'. Gent & Co advertised complete wireless sets and also components to build sets so that clockmakers could regulate their clocks by the Wireless Time Signals broadcast from the Greenwich Mean Time Clock by the BBC. They said in their advertisements: *Dozens of Watch and clock firms have adopted our Assemblers Outfits for this purpose, which shows how the Trade appreciates the fact that Greenwich Time can now be taken by "everyone every day"*, (see figure 2).

Hirst Bros also advertised for a long time, always showing one of their sets, but often combining this with a picture of one of their current range of clocks (figure 3). this firm seems to have had the greatest range of models... 18 in 1926. Gent & Co made 3 rather expensive sets priced from £8/5/- to £22/5/- (£8.25 to £22.25).

The other two clockmaking firms advertised rarely and only their clocks, but they also made wireless sets.

Princeps Clocks (Prince's Electric Clocks Ltd) of 173 Bond Street, makers of electric clocks, offered two wireless sets which were even more pricey then those of Gent & Co: £27/10/- and £29. Finally TMC, who were one of the most important makers of electric master clocks a decade later, produced everything for cheap crystal sets costing about £1.50 to a portable at £21 and a classy cabinet model with glass doors for £23.50... seven models overall.

Most of the cited advertisements went out between 1923 and 1925, and by 1926 there were no more, but it seems that the firms mentioned above were all making them one year later in 1926[6]
In the early period (1922/25) there were more than 1700 manufacturers of wireless sets who were members of the BBC. Some of the early sets made between 1922 and 1924 were given a 'seal of approval' by the Post Master General (PMG), and carried the seal on the case. They were subject to test and approval by the Post Office (GPO), see figure 4.

It would be interesting to know if any collectors of early wireless sets have concentrated upon the aspect of the 'horological link' as it is quite likely that there were many more firms making sets for the clock and watch trade than the four firms I have mentioned here.

1 The New Horophone, HJ (1919), 62, #736, p45
2 As reported in the HJ, (1923), 65, May p190.
3 'Daylight Saving and the Broadcast of Time', HJ, (1924), 66, #789, May, pp 169-172.
4 weekly wages were often only £2... and severe depression and unemployment were to come.
6 See ref 1
7 the data on models for Hirst Bros, Gent & Co Ltd., Princeps and TMC are all cited in the appendix to 'Early Wireless' (1980) by Anthony Constable, published by Midas Books, 12 Dene Way, Speldhurst, Tunbridge Wells, Kent TN3 ONX, ISBN 0 85936 125X, and refer to the year 1926.

Direct Action Tuning continued

back to the high frequency end of the dial before pressing buttons. Not very user-friendly! To get from press-buttons to manual, the tuning knob is pulled out; this lifts the latch bar and allows all the buttons to return.

Two chassis used this system, the 660 and the 555. The latter was the cheaper one, and the 660 had two rows of buttons and an epicyclic drive on the manual tuning. The buttons on the 555 are too close together for people with thick fingers.

From the customer's point of view, it was all very confusing. Setting the buttons was tricky, as you didn't know where you were on the dial. You had to make sure that the pointer was returned to zero before pressing a button, and you had to select the right waveband. In fact it all worked very well, but you had to know the rules! Setting the buttons, by the way, was accomplished by means of a special key which set the screw inside the buttons. This key is always missing from these sets, in fact I have yet to see one!

Philips obviously took all these objections to heart, and the next range of sets. which came out for the 1939 Show, was much more civilised. What they did was to change the press buttons to piano type keys. These turned a shaft which moved the pointer by means of a crafty arrangement of bell cranks, so that it would work at sufficient speed. This shaft also carried a crank, which pushed the tuning capacitor into position. It was also arranged that this shaft could move the bandswitch if desired. Further, the tuning capacitor foils were tapered, so that the dial drive could be linear.

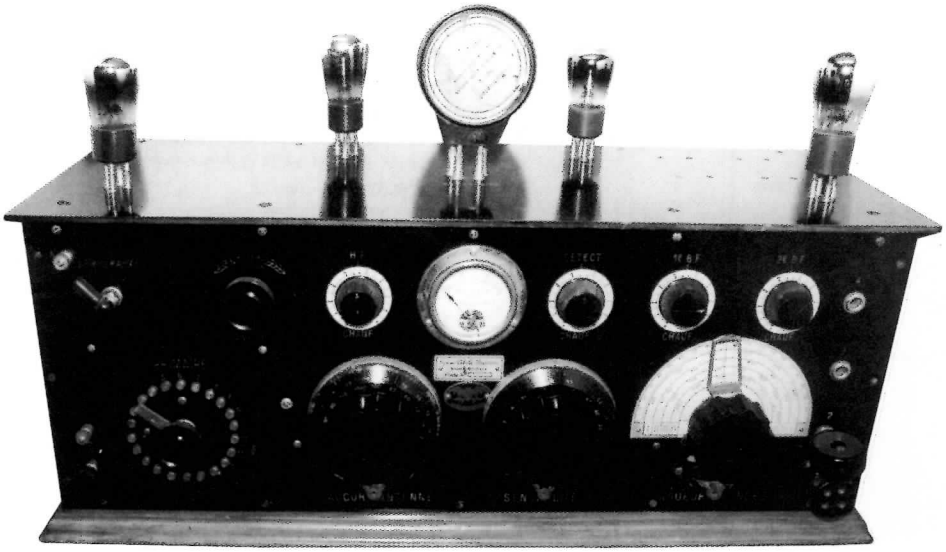
It will be noticed that they had now gone back to a rotating shaft, so that the whole point of the clever tuning capacitor had been lost! A normal capacitor would, however, have required a much larger movement of the shaft. Surprisingly, the mechanism had no trouble with locating the capacitor with suffficient accuracy, and these systems still work reliably. Even the capacitors never seem to give trouble which considering that they are not dust-proofed, is amazing. This type of mechanism is set by a different type of tool, for which they provided a little hole in the back of the cabinet. They still get lost, though! There is also a provision for setting the first three keys to either medium or long waves by the same tool. Changing from keys to manual is accomplished by pressing in the tuning knob, which releases all buttons except the waveband selectors. Pressing any key will release this.

Apart from the expense of assembling the mechanism, this system seems to be ideal, and one wonders if it would have been used again in the next year's models. Unfortunately, more serious matters intervened, and by the time things were back to normal costs had increased to the point when radios had to lose all their frills to show a profit. So all that clever engineering was never used again.

Apart from the tuning mechanism, these sets were well ahead of their time; if you imagine the buttons in cream instead of brown the styling is very like any of those German sets of the fifties. Except that they got all vulgar and overdid the brass trim!

a POGO receiver

by Pat Leggatt

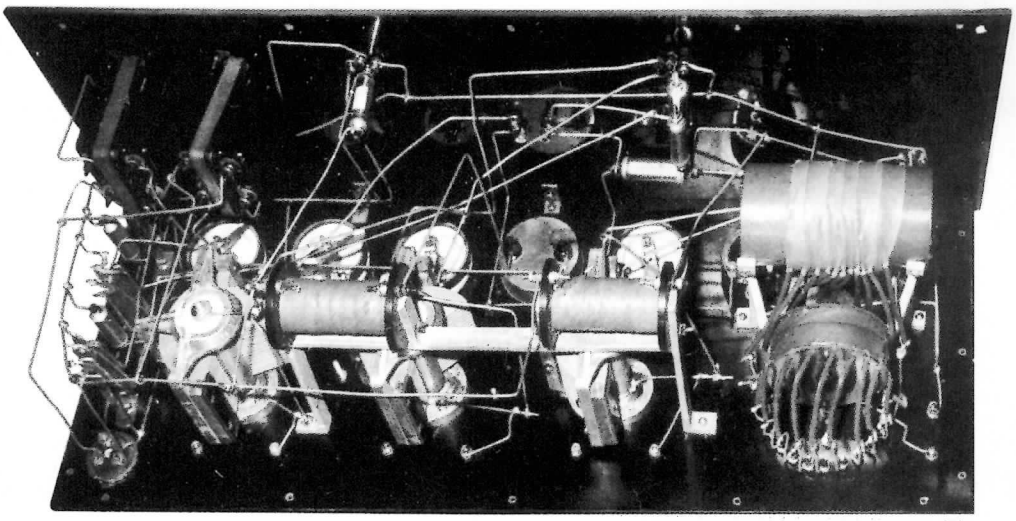


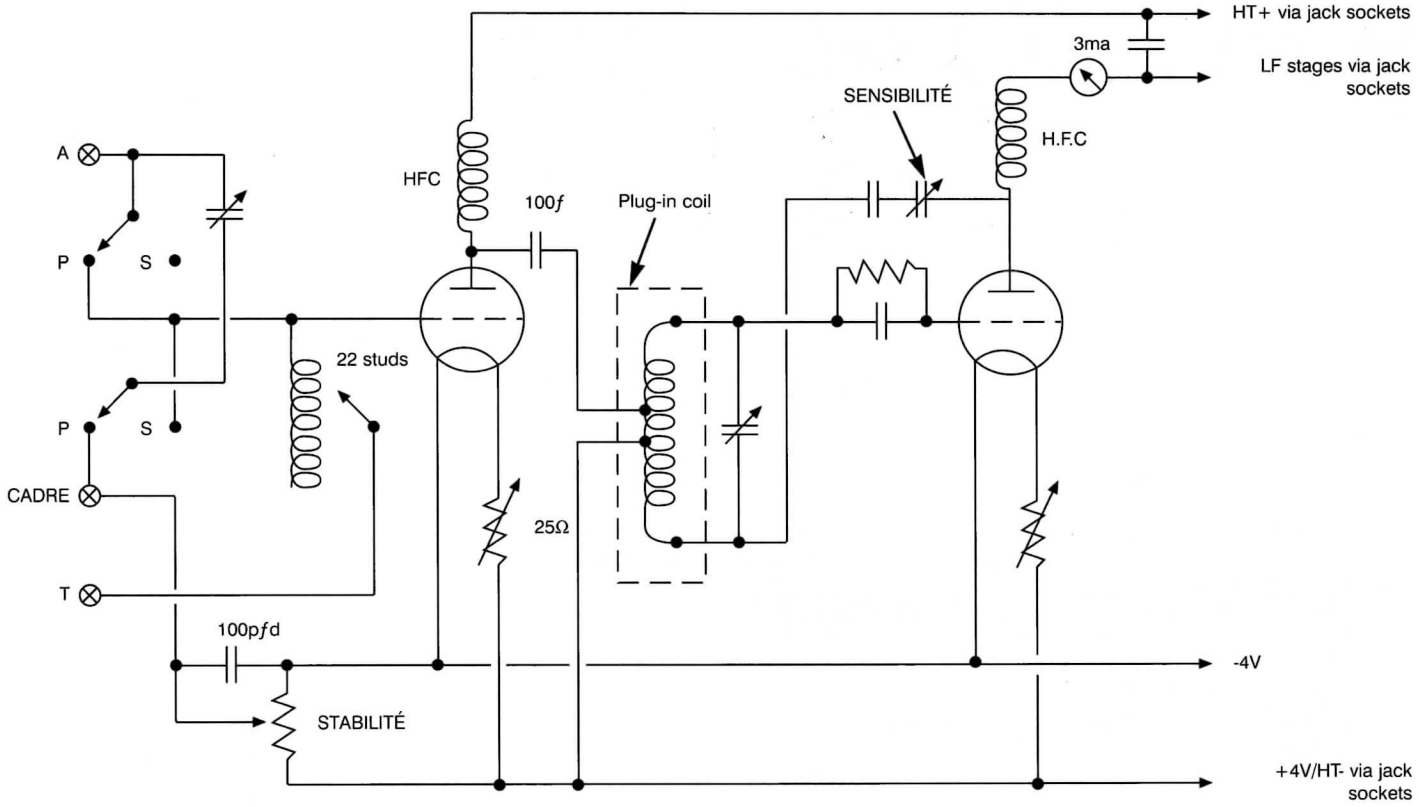
I'm afraid the title is one of my silly jokes. In fact it refers to my recent acquisition of a 1925 French set labelled for medium waves (Petites Ondes = PO) and long waves (Grandes Ondes = GO). The 4-valve set was manufactured by the J.H.Berrens company and is designated Système Abélé Berrens type AB4. As the pictures show, it looks quite impressive from the outside and the innards have something of a battleship appearance. An unexpected trap for the unwary circuit tracer (i.e. me) is the fact that the moving vanes of the variable condensers are insulated from the condenser frames by not very obvious porcelain bushes.

The medium wave internal coil is in series with the long wave one below, and a stud switch selects no less than 22 tappings on the coils, 11 each for the PO and GO. The HF stage therefore covers medium and long waves without the necessity for plug-in coils.

The aerial tuning condenser is switched to be either in series from aerial to the first valve grid, or in parallel from grid to the Cadre (frame aerial) terminal and LT potentiometer. With a normal long wire aerial, the Cadre and T (Terre = earth) terminals must be strapped together. If a frame aerial is in use it is to be connected between the A and Cadre terminals, with the tuning condenser switch in the Parallel position and the T terminal left unconnected.

A triode HF amplifier with tuned grid/tuned anode circuit is prone to self-oscillation by virtue of feedback through the internal anode/grid capacitance. To guard against this the valve grid can be biased positively from the Stabilité potentiometer via the





strapped T and Cadre terminals: the resulting grid current damps the tuned circuit and prevents oscillation.

The leaky-grid detector is conventional except for its plug-in coil, one of a set of four coils covering 165 to 4100 metres: this plug-in unit is of the Abélé form. Abélé was an officer in the French Signal Corps who derived his circuit from a World War I design, and it became quite popular in France during the early 1920's. In fact it is no more than the well-known Hartley circuit where the grid and reaction feedback sections of the coil, with the junction earthed, are tuned as a series combination by a tuning condenser straddling the two. In the Abélé arrangement the signal from the HF stage anode is taken to a tapping on the grid coil section. The name Abélé is virtually forgotten today, and Hartley is always credited with the circuit; but I don't know which of them was actually the first to devise it. In the original description of the Abélé circuit that I have seen, both HF and detector anode HT feeds are via HF chokes as in this receiver; but this does not seem to me to be a particularly significant feature.

There is a 3 mA meter in the detector anode feed. The stronger the signal, the more the average grid potential of a leaky-grid detector is driven negative and the lower the anode current, so minimum current on the meter should indicate optimum tuning. In practice however, I find very little change in anode current on normal signal levels, so this feature doesn't seem very useful.

In the interests of simplicity I have omitted the two transformer-coupled triode LF stages from my sketch of the circuit diagram. They are conventional, with jack sockets for taking output from the detector or from the first or second LF stage. Plugging into any jack socket feeds HT and LT supplies to the appropriate valves, while disconnecting any following stages. The valves in the set are Philips continental types, with 4 volt filaments.

Getting the set into action was rather trickier than I would have hoped. Both LF transformers were in good order; but two of the filament rheostat elements had fractured although these were not too difficult to repair. The real problem was the thickest and most highly resistive layer of corrosion on the valve and plug-in coil sockets that I have ever come across. This may not sound much, but it took a very long session of scraping to prevent even the slightest movement of valves or coil producing crackles and fizzing, or complete loss of signal. However, once this saga was over, the set performed pretty well with good sensitvity and excellent selectivity.

But the real attraction of the set for me is the elaborate front panel and the valves sticking up on the top.

Tunbridge Wells Meeting

The Wireless year kicked off with one of John Howes' swapmeets at the Angel Centre in Tunbridge Wells. It was the usual well-run affair with above average catering thrown in. As a venue for wireless swapmeets, the Angel Centre is ideal as the main area of business is extremely well lit, which is rather useful in checking for hairline cracks and evidence of authenticity in potentially expensive purchases.

Parking is no problem since the Angel Centre is almost next door to a multi- storey car park. Useful when you've just bought a man-sized nineteen thirties radiogram.

Transformers

by Pat Leggatt

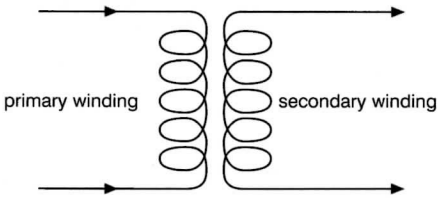


figure 6

Transformer operation

We have seen that if a coil is surrounded by a changing magnetic foeld, a similarly changing voltage will be induced in the coil. We have seen also that a changing current in a coil will produce a similarly changing magnetic field.

So let us combine these two effects to produce a transformer.

Figure 6 shows two coils closely adjacent to each other, the 'primary winding' on the left and the 'secondary winding' on the right. If we apply an alternating signal voltage across the primary, current will flow and produce an alternating magnetic field. The secondary winding is close enough to the primary to be under the influence of this magnetic field, so a similar alternating voltage is induced in the secondary winding. Not only is the secondary coil close to the primary, but in transformers for radio frequencies the two coils are often wound on the same former, sometimes with the turns of the two windings actually interleaved.

No passage for direct current

In the case of a capacitor we noted that no electron current flowed through the dielectric from one plate to another; but an alternating voltage on one plate produced an electric field which induced a similar alternating voltage on the other plate. So we said that alternating signals 'get through' the capacitor, while any steady direct voltage is blocked.

In a transformer no electrons flow from the primary to the secondary, but alternating signals 'get through', this time by virtue of the coupling provided by the alternating magnetic field: once again, steady direct voltages are blocked.

Transformer cores

Transformers for use at radio frequencies may be 'air-cored' - that is simply wound on an insulating former - or they may be wound round an iron dust or ferrite core in the same way as tuning coils.

Transformers for audio frequencies, or for use at power frequency (50 Hz) in the form of mains transformers, always contain an iron core to ensure that the magnetic field from the primary current links closely with the secondary winding.

Voltage ratios

One of the most useful features of a transformer is that it can be wound so that the voltage produced in the secondary winding is greater or less than the voltage applied to the primary.

The relationship between primary and secondary voltages is very straightforward, depending simply on the number of secondary turns compared with the number of primary turns. For example, if the primary has 1000 turns and the secondary 3000 turns, the transformer has a turns ratio of 3:1 and a 1 volt signal fed to the primary will produce a 3 volt signal at the secondary.

As another example, a 240 volt mains transformer to provide 6 volts for valve heaters would need a turns ratio of 240/6 = 40:1. With 1000 turns on the primary, the secondary would have 1000/40 = 25 turns. Note that a mains transformer can have several separate secondary windings, typically a high-tension (HT) winding providing perhaps 350 volts for the rectifier anodes, a 4 or 6 volt winding for valve heaters, and a 4 or 5 volt winding for the rectifier filament or heater.

Audio frequency transformers, often known as 'LF transformers', may be used to couple one valve amplifying stage to the next. They generally have turns ratios in the region of 3:1, providing a useful step-up in signal level.

Impedance ratios

Another useful application of transformers is impedance matching; this is most often found where a loudspeaker must be matched to the output valve of a radio receiver or audio amplifier.

To secure efficient working, the impedance of a loudspeaker should be comparable with the anode impedance of the output valve: (you will recall that impedance is the 'resistance' of a device to alternating signal currents). The anode impedance of an output valve is typically of the order of a few hundred to a few thousand ohms; so the old high-impedance moving-iron loudspeakers in the days of early vintage sets presented no problem since they could be directly connected to the output valve anode.

But later sets were of course required to drive moving coil loudspeakers, in which the 'speech coil' impedance was usually as low as 3 ohms. So how could several thousand ohms be matched to 3 ohms? The answer lay in employing an output transformer.

An impedance across a transformer primary is reflected as a different impedance at the secondary. But the relationship between primary and secondary impedances is not quite as simple as with voltage ratios. Without bothering to delve into the mathematics, the impedance ratio of a transformer is equal to the square of the turns ratio; or putting it the other way round, the turns ratio is the square root of the impedance ratio.

As a practical example, suppose we want to match a 3 ohm loudspeaker speech coil to a valve requiring an anode load impedance of 2700 ohms. The impedance ratio we need is 2700/3 = 900:1, and a transformer to provide this must have a turns ratio of the square root of 900, that is 30:1.

When thinking about impedance ratios, an interesting point arises to do with audio transformers. It was said above that audio transformers generally have ratios of about 3:1 and that this gives a useful step-up in signal voltage. The question arises, why not use a transformer ratio of 50:1 and thus get considerable signal amplification without the need for a valve?

The difficulty would be that if the impedance at the primary were, say, 10,000 ohms, then the impedance at the secondary would be 50^2 x 10,000 = 25 megohms. The transformer secondary would inevitably have some self-capacitance, and there would also be the stray capacitance of the wiring, perhaps amounting to a total of 100 pF across the secondary. The reactance of this 100 pF at the higher audio frequencies of 10 kHz would be about 150,000 ohms, so we would have 150,000 ohms across the 25 megohms. This would result in the high frequencies being shunted away through the capacitance and the 'treble response' of the receiver would be virtually nil!

Radio-frequency transformers

A radio receiver will usually contain a few radio-frequency transformers, for coupling the aerial to the receiver input, and for coupling between RF or superhet IF stages. In a reaction circuit too, the reaction coil is wound close to the tuned grid coil and this forms a transformer, coupling the anode circuit back to the grid.

Auto-transformers

If a coil is provided with a tapping point, it can form an auto-transformer. Although there is only one winding, one can use the section of the winding between the tap and one end as a 'primary'; and the whole of the winding as the 'secondary'. The auto-transformer will behave exactly the same as a conventional two-winding transformer as regards voltage and impedance changing, with the turns ratio being the ratio of the turns between the tap and one end to the turns on the whole winding. Since an auto-transformer 'primary' and 'secondary' are parts of the one coil and so are directly connected to each other, direct voltages will not be blocked in this case.

The Bumper

by Harold Page

Every day when returning to his Norfolk home Charles Paget would reverse his car carefully in the garage. Carefully, so as to just touch a cabinet at the rear of the garage causing the old engine that was standing on top of the box to rock slightly, indicating that the family car was in position and the up-and-over door would close.

One rainy Sunday morning Charles was in a tidying up mood. What better place to start than the garage. Eventually he got to the box at the back. It was in fact, some sort of radiogram. The plate on the back read 'Sound Sales London Ltd., Farnham Surrey'. Nobody had heard of Sound Sales. The cabinet was pretty dirty and the top rather oily. Inside the lid, however, the large round dial and record player looked quite impressive. It was too big to put out for the bin men, so back it went into its bumper position, this time without the oily engine on top and an odd bit of hardboard leaning against the side to restrain the daily nudges of the car bumper.

One day in Norwich with an hour to spare, Charles visited Strangers Hall Museum and the radio display. Radiograms like his had been restored so he enquired, and my friend and restorer Mike Holmes took over from there.

The label on the back says 'Sound Sales London Ltd, West Street, Farnham, Surrey'. The model is 6D82Y made around 1944/45. This small company obviously made an early start in limited production when large fry were still involved with government wartime work.

The heavily constructed walnut veneer cabinet, although severely oil stained on the lid, responded to the customary treatment; scraping down and repolishing; even the speaker fabric responded to cleaning and reversing. Not a masterpiece of cabinet design, but of very solid construction. It now looks fine as the photographs show.

The chassis is well built and amazingly clean. Long, Medium and Short waveband coverage and seven valve line up 5V4, two PX4's in push pull, ECC31, 6R7, ECH35 and KTW63 giving about 10 watts output in mono. A 10" round PM speaker is built into a prepared enclosure with bass port. No name on the unit but it gives forth a joyful sound with full accent on bass production common to most models of this earlier period.

In addition to normal input sockets is a low impedance 30 ohm mic socket. Mike Holmes found the chassis a joy to work on. Considering the neglect, replacements were not too many.

The only valve replacement was the 5V4 rectifier, hence its abandonment. Some 14 condensers took the toll of dampness and needed replacement. All resistors were of a heavy duty make and now needed replacement. Nightly puffs of hot carbon monoxide from the car exhaust seemed to have kept the cabinet dry and completely free of rust or corrosion. The carbon monoxide seemed to have kept the woodworm (who usually enjoy the sweet glue from the cabinet) at bay, however I cannot recommend this treatment for eternal preservation.

A most interesting feature of the chassis is a selectivity circuit using the linear variometer developed by Sound Sales in the late 1930's. Two classic reactance coils reduce the gain of unwanted frequencies mounted on small rails. They are physically operated by a knob on the top panel. Most probably unique in domestic equipment, crude maybe but certainly efficacious to this day.

The Collaro 78rpm deck, variable speed adjustment by governor, magnetic pick up, steel needles all responded well to the usual cleaning and lubrication.

My restorer Mike Holmes was proud of the work done on this unusual instrument and the owner Charles Paget was delighted to be listening to the 'box' he previously only bumped into.

I am grateful to BVWS member Ivor Abelson whose family knew the Sound Sales organisation well. He tells me that quite a small band of devoted workers started their small production runs in a factory in the old Marlborough Studios in Holloway quite close to the Holloway tram station; later to house the Invicta factory as a subsidiary of Pye Ltd. This was in the mid 1930's. In 1938 production was still modest, but also from the leafier location in Farnham, Surrey plus a showroom in St Martins Lane, London WC2.

They wound their own transformers, frequently used components with much greater handling power than most manufacturers would specify. They also made their own front spider speaker, no doubt the same as the one in our discovered model.

As long ago as 1936 they produced a speaker enclosure separate from the main unit. Quite thin and fire-screen-like in appearance with castors underneath so it could be pulled out to give an early equivalent of 'surround sound'. A variant of this speaker could be hung from the ceiling on cords or chains.

The company was never in serious competition with the big names of the day, perhaps somewhat akin to the original RGD company before it became a badge denoting an up-market Regentone. Nothing much is recorded about production into the 1950's by which time the devoted band of pioneers must have reached retirement age and no doubt Sound Sales itself also retired.

If you seek even greater detail about Sound Sales, Ivor Abelson wrote a detailed article in a back number of the Radiophile.

Letters

Dear Editor,

With reference to Barrie Land's letter on page 42 of the Spring Bulletin regarding re-badging of Valves I should like to take the opportunity to outline the situation which existed for the valve manufacturers at the end of the Second World War in 1945.

During the war, the supply of receiving valves to the retail trade was very severely restricted and many types were completely unobtainable resulting in a lot of receivers being laid up for want of a valve. Reverting to civilian peacetime production was a gigantic task for the valve manufacturers whose first priority was to supply the Setmakers who had the Retailers screaming for new receivers and secondly, to produce earlier types of the 1930's for maintenance purposes required by dealer's service Depts.

No one manufacturer could ever produce all of their range of valves at the same time since factory output was limited by the equipment available in the circumstances.

The British Radio Valve Manufacturers Association, normally abbreviated and referred to as 'The BVA' brought together the major valve makers of which Mullard, The MO Valve Co., Cossor and Mazda were the dominat members. Once a particular type of valve was in production it was planned to make a calculated quantity in order to be cost effective since re-tooling the production lines to make another type was expensive and time consuming, and so batches were made by the various manufacturers under internal code numbers and passed to their stores unbranded.

When a manufacturer was desperately short of a particular type they would 'buy in' the equivalent/comparable type from whichever company had such stock to spare and the valves would be sprayed, if applicable, type embossed, boxed and marketed as their own brand. This had no effect on the 90 day guarantee as this was honoured by the brand name under which they were sold.

This method was adopted as being expedient to ease the short supply situation of valves urgently needed for the domestic market and largely centred on the 4 volt AC types popular in the 1930's but no longer required for modern post war receivers. The actual maker can normally be identified by the shape of the glass envelope and any 'purist' hunting for a particular valve can always select accordingly.

From 1946 onwards, the interchange between manufacturers developed even further and to quote a few examples: The Marconi 143 & 147 ranges were all made by Mullard, and the Marconi 148 range was made by Cossor.

Not only were they fitted in new receivers under the Marconi brand but replacement stock sold wholesale also carried the Marconi label. With the advancement of television further integration took place with the adoption of the 'European' nomencature based on the Mullard/Philips system and used extensively by most Companies.

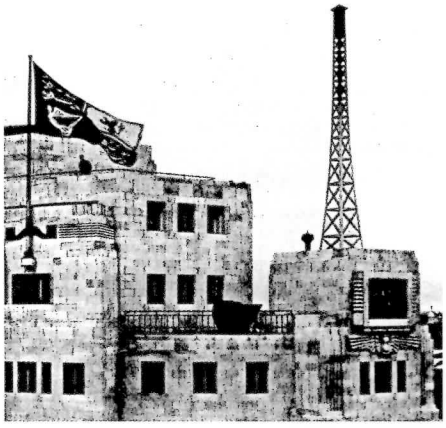
I trust the foregoing will somewhat assist in understanding the situation which existed in the past.

Yours sincerley
Don hewlett (Ex Mullard)

Dear Editor,

It was sheer coincidence that my newly acquired membership of BVWS, its Winter Bulletin and my long searched for copy of 'Broadcasting House', published by the BBC in 1932, arrived on the same day!

I was particularly drawn to Geoffrey Horne's letter having noticed that on page 13 of the BBC book, which is mainly an architectural description of BH, it says ' ...at the seventh floor level, is a rectangular clock which is chimeless in the ordinary sense, but with the aid of a special amplifier and loudspeaker is



able to reproduce the chimes of Big Ben at their natural strength at such times as they are being broadcast in the ordinary way. It is probable, however, that in practice the chimes will only be used once a day at a definite hour.'

Enclosed is a photostat copy of plate 6- the accompanying photograph in the book, which clearly shows the loudspeaker. Unfortunately I am unable to throw any more light on the subject, but it does indicate that the BBC was quite proud of it at the time.

Frankly I, too, doubt that it lasted very long. It strikes me as a silly idea anyway! (Sorry about the pun).

Looking forward to receiving future issues of the Bulletin and wonder what I've been missing all these years.

Sincerely yours
Malcolm Addey

Dear Sir,

Like many other members, I was delighted with the coloured cards depicting Marconi demonstrating his apparatus to an audience of naval and military observers on Salisbury Plain during September 1896. Interestingly, the artist made one slight error, which does not in the least detract from the pleasure his painting gives.

He had obviously taken for his model of Marconi's apparatus a frequently reproduced photograph of the transmitter the inventor had llsed earlier in Italy: it had a small aerial consisting of a vertical plate of copper. But in his first Salisbury Plain demonstration, he had replaced this, on both his transmitter and his receiver, with a parabolic copper reflector 'somewhat like a searchlight projector', according to the observer Captain Jackson RN.

May 1997 is the centenary of Marconi's Bristol Channel trials which vindicated his system (after a false start) and began the era of radio, TV, etc. There will celebrations to mark the occasion on both sides of the Bristol Channel.

Yours faithfully,
Eric Westman

Dear Editor,

In your last journal, Roger Chacksfield wrote in to suggest the possibility of re-manufacturing 'magic eye' valves for our sets. What a wonderful idea. It would allow them once more to shine brightly rather than present only a dull glimmer of their former glory. Phosphor ageing is indeed a problem that diminishes even the most loving restoration of a vintage set. I for one would be prepared to pay a bit over the odds for a nice new or reconditioned 'magic eye' rather than having to resort to making a little transformer based voltage adjustment unit to suit a more modern valve which in my view detracts from the restoration.

It would be interesting to somehow gauge members' overall interest in this idea and if appropriate determine the viability of such a proposal.

The only place I know which has the facilities for blowing valves is The Vintage Wireless Museum. Could this possibly represent 'a nice little earner' for Gerald Wells and the wonderful heritage he has housed for all our enjoyment?

On another point, I was very pleased to read that the BVWS intends to have a presence on the World Wide Web. After my article a while back, Radio on the Net, and having included information on my Web Page relating to the BVWS, I have had many inquiries from around the world from both individuals and societies requesting either more information or membership details. I have always directed these enquirers to write to the BVWS for more information while at the same time adding my own enthusiastic endorsement of the Society, its Journal and the events it organises!

As previously pointed out, there are many excellent museums and private collections available to view on the WWW. If the BVWS, as suggested, intend to have a serious presence I do hope space is provided for Gerald Wells and his museum. The one page that is now devoted to the Vintage Wireless Museum (thanks to Richard Lamont), whilst better than nothing, does neither the man nor the collection much justice. It would be my wish to see his whole collection catalogued and displayed online with date and data available for each set, though having created my own modest site can appreciate what a major undertaking this would represent. I can think of no better way of making such an historic collection available world-wide to those who share our passion. Imagine (if you will) an online 'living, breathing' *Radio Radio* in full colour available twenty-four hours a day. A spin-off might be that having created the linked documents and pictures of the collection it could, for a modest price, be 'burned' onto compact disk. I would be first in line to buy one.

I have always maintained that there are far too few collections of British radios available on the Net. Another way of promoting both the Society and the hobby would be to 'sell' web space to members wishing to display their attic bound collections on-line. My collection is physically situated in London but my web page is sited in America. This seems a bit odd. I'd like to have it based in the UK with a link from and to the BVWS web page.

The opportunities are boundless and I (as I am sure have many other members) have many ideas on how to utilise this medium for the benefit of both the Society and its members. E-mail, an online enquiry system and a members news/discussion forum (newsgroup) focusing on British radio being

but a few that spring to mind.

As ever the BVWS is continually improving, its many diverse offerings much appreciated by myself and my fellow members. My thanks go to you for your continued efforts.

Jonathan Warburton-Brown

Dear Editor,

I was pleased to read the 'Delightfully Personal' article by John Ounsted featuring the Marconi's P17 and 20B, as this class of reeeiver has always interested me and indeed it was a timely follow up to David Read's 'Personal Portable' feature exactly one year ago. Like him during the early 1950's, I was consumed with envy at the sight of these compact superhets in the possession of boys with wealthy parents, and only acquired a P20B by an elaborate 'swap' featuring my home made two-valve-plus reaction portable which had seemed OK until then.

Back to the present article and regarding the 'puny' and 'distorted' sound John attributes to them. Although it may be 'Time lending enchantment..', I don't recall it being so bad at the time. I was able to borrow an Ever Ready B1 occasionally, (which is of course identical to the P17B but with a simpler and perhaps more pleasing speaker grille design) and it had quite a rich and pleasant sound as did my newly acquired P20B, at least initially! For after only a few weeks of serious pleasure the sound quality and volume deteriorated rapidly. It turned out to be the speaker which I eventually replaced with one of the few available miniatures of the day, a WB 2.5". Although this was three ohms rather than ten, (not a detail which bothered me at the time), it worked well, restoring the volume and quality. So perhaps the speaker has always been an Achilles heel.

Regarding the two or three P20B's and B1's I have restored in the last few years, I have also found it necessary to take comprehensive measures to get anything like a reasonable sound from them. Firstly, I replace the detector and output valves, 1S5, 3S4 or equivalents routinely. A tired 1S5 in particular puts an unpleasant edge on things. Then it is wise to replace the R's and C's affecting the 3S4 operating conditions i.e 1S5 and the 3S4 bias resistor which are almost sure to be high in value. Then the anode to grid audio coupling capacitor. After this it may be worthwhile replacing the speaker with a modern 8ohm miniature, there are plenty available at a modest cost, though sadly the quality may be little better. I prefer to keep the HT value up to its intended 69v having the impression that the more headroom you give it, the better it sounds, though I have not been so rigorous with scope measurements etc as John.

One point regarding long wave and the Ever Ready B1 successor, the B2, which incorporated it. Why was no circuit diagram ever published in the Trader etc. Did it ever get into major production? I know of only one set in existence via correspondence with a BVWS member whose uncle designed the Ever Ready logo in the late 1920's.

Although John refers to 'Those precious, delicate and hard to find valves' I am always pleased to find the valves for the two featured sets and their equivalents freely available. Exceptions to this would be exotic types like the 1L6 frequency changer for a B7G Transoceanic. Thanks again for an interesting article.

James Duckworth

Those Early American Tube Bases

By John W.Stokes

This article is offered in an attempt to persuade (I hesitate to use the word 'educate' lest it cause offence) British vintage radio collectors, historians or others to use the term 'UX' in the correct manner. As things stand, the letters UX have come to be used in Britain as a synonym for any pre-octal American type base, whereas the term should be applied only to 4-pin types, as explained below. Before offering an explanation of how this misuse arose, a little background is in order.

Originally, the first standardised 4-contact base for receiving tubes came into use in the US when the types UV200 and UV201 were released late in 1920. However, it must be pointed out that the prefix UV was not originally intended as a base identification but actually indicated an apparatus classification in the Radio Corporation (RCA) equipment catalogue of the day. Not until after the introduction of tubes having a modified type of base, e.g. the 200-A and 201-A, did the need arise for a means of differentiating between two types of base and so it was that the prefix UX came into use, the first two tubes to use it being the types UX200-A and UX201-A.

The UV base quickly became obsolete on receiving tubes, being replaced by the UX style, and by 1930 the UX prefix was dropped and soon afterwards so was the first of the three numerals, thus the UX201-A became 01-A, and so on. Perhaps it should also be mentioned that some manufacturers attempted incorporate a brand identification in their style of type numbering by using modified prefixes or type numbers, examples being Cunningham C301-A, De Forest D401-A, Sylvania SX201-A and so on. However, the introduction in 1934 of a standard Radio Manufacturers Association (RMA) system of tube numbering did away with the use of prefixes altogether. Before leaving the subject, mention should be made of a final prefix, that of 'UY'. This was the standard American 5-pin base used originally on the type UY227 indirectly heated triode of 1927, but like UX, the term UY was also discontinued after 1930.

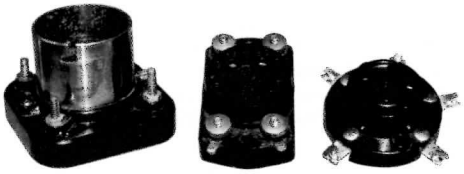
From the foregoing it can be seen that the prefix UX was only one of three in the series UV, UX and UY, each indicating a different style of base. As regards the the incorrect and confusing British usage of UX, this seems to have stemmed from the time when Brimar first marketed American type valves in 1934. Brimar valve manuals issued up to the 1947-8 edition referred all pre-octal American types as (U.X.BASE). Even the respected Wireless World (Shame on them!) continued to use the appellations UX5, UX6 and UX7 at least up to the 7th edition of their Radio Valve Data.

After all these years, is it too late to hope that this errOneous usage can be corrected? Perhaps the BVWS could give a lead and thus help to put the record straight.

left: UX brass base, right: UV brass base

left: UV bakelite base, right: UX bakelite base

the standard American 5 pin UY base



American sockets (left to right) UV, UX, UY

BVWS minutes

Minutes of the BVWS Committee meeting held at The Vintage Wireless Museum 23 Rosendale Road Dulwich London SE21 8DS on Tuesday 7 January 1997.

1 Apologies for absence - None received

2 Minutes from last meeting / Matters arising - Minutes from meeting of 26/11/96 agreed correct.
Protecting the BVWS logo - David Read has approached a patent expert in respect of this matter. It appears that it would be difficult for the Society to implement, since the Patent act does not really cover society usage. But the Society is protected in law by common use.

3 Final financial report on the Commemorative Exhibition/report on Harpenden Swapmeet 24 Nov 1996.
Ken Tythacott presented the final Commemorative Exhibition accounts to the committee. Final adjustment shows the actual deficit to be £10.00 less then in the previous statement.

Estimated expenditure: £8,280
Actual : £6,905

Estimated deficit: £4,655
Actual: £3,474

The financial statement for Harpenden is as follows:

Total expenditure : £813.52
Total Surplus to BVWS Acc £345.18

The following figures are for the Harpenden Meeting 25 Feb 1996 for comparison.

Total expenditure : £810.00
Total surplus to BVWS Account £462.00

4 Membership Secretary preliminary report on state of renewals and Membership Numbers.
Mike barker reported that the Society now has 1200 members. A number of the Committee members volunteered to help Mike Barker with the mammoth task of sorting through the renewals received. Date to be set.

5 Tabling of prospective new members.
Mike Barker circulated the new membership application forms for Committee approval. The Society is pleased therefore, to be able to welcome the following new members: Max Eckert, Michael Mc Quiggan, Alan Weaver, John Miles, Bryan Hodgson, Mr S Barton, Robert Harwood, Chris Rees, Gerald Horrox, Gary Hood, Stephen Cross, Anthony John Airs, Bryan Webb & Dave Walker.

6 Preliminary report on the state of the Postal Election Ballot.
Mike Barker reported that a good response had so far been received.

7 Report on state of membership cards
Mike Barker reported that these should be ready for the first week of Feb. Delivery to Members would be by mid Feb. Guy Peskett expressed concern over the current wording on the back of the membership card, as it does not appear to fit in with the proposed new constitution. W.H. suggested we look at this further, however it was now to late to change this as the cards were now being printed.

8 Preliminary report on response to Membership list Questionnaire.
Mike Barker reported that the majority received have so far said yes to the idea of a Membership list.

9 Held over to next meeting

10 Held over to next meeting

11 Events Organiser replacement

Ken Tythacott reported that a suitable candidate had come forward to fill the position.

12 Held over to next meeting

13 Held over to next meeting

14 Future of the BVWS - Discussion document
Willem Hackmann tabled a discussion document covering the future of the BVWS. The Committee were asked to read through the documents with a few coming up with practical suggestions and ideas that would be of benefit in taking the Society forward over the next few years. W.H. suggested that a separate meeting be held to discuss the topics at hand. The diverse range of topics include, the society's swapmeets, Committee size, structure and individual's roles, bylaws and how they will be defined, new members, the internet & electronic communication.
Willem Hackmann felt that we should have meeting dates set in advance as a framework for the coming year. Guy Peskett. felt that these should be planned meetings.
Mike Barker tabled a proposal that we should move the financial year to the membership year starting in 1998. David Read did not feel that this would create too much of an accounts problem. David went on to explain how our accounting periods worked. The current arrangement is in keeping with a Tax year and in general is followed by most organisations in their accounting and finance year. A number of Committee members felt that the current arrangement for the nomination of new members was slow & cumbersome. Was a proposer and seconder necessary? Suggestions for a Sub Committee to be set up were put forward to deal with these applications.

15 Held over to next meeting

16 Held over to next meeting

17 Any other business
Mike Barker / W.illem Hackmann asked for a vote of thanks for David Grant & Mike Izycky for their help in the supply of the 405 line standards converters at the BVWS Commemorative event in September.
Guy Peskett bought the Co-option of Ian Gurton at the forthcoming AGM to the Committee's attention.
Guy felt that we should not charge the membership for the cost of the contact list if one is subsequently issued.

18 Date & Venue of next meeting
11 February 1997 - at 5 Templewood, Ealing, London W13 8BA

Minutes of the BVWS Committee meeting held at 5 Templewood, Ealing, London W13 on 11 February 1997.

1 Apologies for absence - none received

2 Minutes from last meeting / matters arising - Minutes from the meeting of 7/1/97 agreed correct.

3 Membership Secretary's report on state of renewals and membership numbers - 900 renewals so far received. No reminder to be sent out to those who have not renewed. The new issue of membership cards will only be sent out to those who have renewed their subscriptions.

4 Tabling of prospective new members - The Committee would like to welcome the following new members to the Society. Chris Plaister, Alan Ford, James Ryan, John Brightwell, Malcom Addey, John Smith, Philip Briggs, Ernest Snashall, Mark Le Petit, Ian Becett, John Pether, Henk Geurds, Michael Roberts, Andrew Orson, Chris Winscom, David Russell, Peter Nash, G Berento, Richard Gibson, Paul Perry, Robin Cooper, Frank Hudson, Arthur Courtney, Anthony Mc Lennan, Andrew Curtis, Roy Lyon, Stanley Davies, John Gallagher, Nigel Baynes, Bill Fargent, Michael Gohl, Andrew Wylie, George Glendining, Leonard Smith, Kenneth Willis, Patrick Cook & Gary Barr.

5 Report on arrangements of Postal Election Ballot.
Mike Barker reported that a good response had so far been received from the membership. 94% approved the constitution. A number of comments were also received back and these are to be passed to Guy Peskett Additionally, Mike Barker has received a number of letters from the members thanking the Committee for the work put in over the past year.

6 Elections Sub-committee
W.H. informed the committee that Gordon Bussey and Tom Going were willing to be scrutineers for the voting count. Mike Barker clarified that the voting papers returned to him are passed unopened to the election sub-committee for counting.

7 Report on response to Membership List Mike Barker reported that 80% were in favour of circulating a Membership List.

8 Events Organiser replacement
Ken Tythacott. reported that Ian Gurton proposed to run the events under delegation by the Committee. But did not as such wish to sit on the Committee, this being due to having other commitments. Ian Gurton would not be able to co-ordinate any of the other Society events. A number of Committee members were concerned at this proposal and thought that it should be a Committee member as Events Organiser and therefore accountable directly to the Committee at their meetings. Willem Hackmann had already spoken to Ian Gurton. who appeared happy to become a Committee member in respect of this post. Willem will contact Ian Gurton to clarify his position in this matter. David Read suggested that in light of these new developments so close to the AGM, we may have a problem in the foreseeable future should a suitable candidate not be found quickly.
Ken Tythacott asked the Committee to confirm booking dates for 1998. The proposed 1998 dates are as follows:

1 March 1st, **2** June 7th (AGM & Auction), **3** Sept 6th, **4** Nov 29th

Ken said that it was likely there would be a 2 or 3% increase in the hire fee, but the conditions of hire will remain unchanged. Mike Barker suggested that the AGM in June, has the advantage of allowing D.avid Read to present a full and final account. It was also suggested that election addresses be received for the December mailing for the 1998 AGM. Ken said that having an AGM at an Auction takes advantage of the seating in the hall that would otherwise not be there on a Swapmeet day. It was also suggested that the Radio Station & Restoration contest could be included in the June 1998 AGM/Auction.

9 1997 Programme of main events
Ken Confirmed that the dates were fixed for 1997

10 Decision on date of 1998 AGM
The proposed date for this meeting has been provisionally set for June 7th 1997.

11 W.G. to circulate to Committee

12 W.G. to circulate to Committee

13 Decision on BVWS on Internet.
Guy Peskett reported that there had been problems on the University server. David Read suggested that a Committee member should be responsible & accountable for any Web pages etc. that the BVWS publish electronically. The Committee agreed to continue exploring this further. Whilst ongoing, the Committee would like to remind all members that the BVWS and the society's Logo cannot be used on their own private Web pages.

14 Report by Carl Glover on progress of Spring BVWS Bulletin.
Carl reported that this issue will comprise of 56 pages (reduced to 48 pages due to Christies auction being cancelled) and will be ready shortly. A number of Committee members were concerned that we would be accepting the advertisement from Christies Auction house in respect of the forthcoming Marconi Auction. Willem will be covering this topic in his 'from the chair' in the forthcoming Bulletin. Acceptance of the advertisement does not alter the societies view on the sale.

15 Any other business
a) Guy. suggested that we should keep a file note on members who are in breach of the societies rules.
b) Carl reported problems with the draft printing of the bulletin which is currently being done at work. a request for a suitable printer was agreed which should cost £1000.00 or less. Mike will make inquiries with a suitable supplier known to him.
c) Guy Suggested that we consider the use of discussion documents where possible.
d) Many thanks to Ian Higginbottom for his hospitality and refreshments at this meeting.

16 Date and venue of next meeting
AGM, Harpenden - 2nd March 1997.

Statement of Accounts for 5th April 1996 to 4th April 1997

Income	**1996/97**	**1995/96**
	£	£
Subscriptions and Donations	21,895.59	18,266.83
Sale of Publications	(- 3,258.89)	695.40
Meetings	(- 878.61)	4,584.10
Interest on Deposit	389.07	336.13
	18,147.16	**23,882.46**
Expenditure		
General Expenses incl. Taxation	5,613.06	2,452.54
Sundries	-	-
Bulletin costs	17,630.90	13,879.59
Extraordinary Items	925.90(printer)	880.08(scanner)
	24,169.86	**17,212.21**

Revenue surplus/(deficit) **(- 6,022.70)**
Represented by a corresponding decrease of 6,022.70 in assets.

Assets	**1997**	**1996**	**Movement**
Current Account at Lloyds	21,717.86	13,146.13	+ 8,571.73
Deposit Account at Lloyds	3,510.49	18,121.42	-14,610.93
Giro	383.39	366.89	+16.50
Cash	-	-	
Total assets	25,611.74	31,634.44	-6,022.70
Increase/Decrease in Assets			**-6,022.70**

David Read FSCA
Honorary Treasurer

I have examined the accounts and books of the British Vintage Wireless Society and confirm that the Statement and Report are in accordance with these records.
David Davis ACMA

Report on the accounts

The accounts of the Society are recorded in double-entry book-keeping and constructed on a cash timing rather than an accrued basis. As an unincorporated club, all surplus is passed back to members by way of Bulletins, supplements and events. At the same time a prudent asset balance is maintained in order to provide for the unexpected.

1 Comments on the year in general.
The year was exceptional in that it embraced both the Marconi Centenary and the 20th year of the BVWS. The Committee consulted the membership and commemorated these in an appropriate fashion with the two-day special event at Harpenden, the reprint Marconi catalogue which was circulated members, and even bigger and better Bulletins. The year also bears the cost of 3 years of membership cards and car stickers (see note 5), the splendid Christmas card, and the heavy postage costs related to all this activity.

It was of course anticipated that all this activity would eat into the Society's bank balance, but this is what such balances are for, and feedback indicates that members feel that they received good value for the money spent. The accounts show that the Society's financial health remains in good order.

2 Subscriptions.
Income under this account contains a proportion of renewals for 3 years. Nevertheless the total of £21,895 makes encouraging comparison with the previous year. An amount of £1,500 relating to future years has been earmarked to ensure realistic budgeting of expenditure against revenue.

3 Sale of Publications.
In normal years a small positive cash flow takes place from the sale of back numbers (as can be seen in the previous year), however this has been masked by the costs of the Marconi Catalogue (£3,025) and Christmas cards (£529) provided free to members, and which have been charged to this account.

4 Meetings.
The cost of the Centenary Week-End (£3,474) has similarly masked the small positive balance that is made on this account. The account is also designed to produce less surplus than in previous years because of the reduction in auction commission charged to members.

5 General Expenses.
The increase in this account is entirely caused by the costs of membership cards and car stickers (£3,690). Last years materials as well as those for the current and next year have all been invoiced during 1996/97, and therefore have impacted these accounts in a single hit.

6 Bulletin Costs (including postage).
The increase reflects the change in quality. content and weight of the Society's journal. The improvement directly affects the reputation of the Society and satisfaction of its members. That it is now a journal attracting articles because it is well worth writing for is also a measure if its success.

As already mentioned, the costs were also higher because of the exceptional activities already mentioned, and a major component has been the increased content and use colour for the BVWS 20th anniversary issue, and the Marconi commemorative year. In future years the number of pages and their weight will be closely budgeted to accord with the revenue available.

The year was also more expensive with respect to postage costs which amounted to £4,589. The improved Bulletin is of course heavier as well as much better than it used to be, and the Marconi Catalogue, the membership cards and car stickers also increased the weight involved. A further factor is that the Society is now also committed to postal ballots every year.

7 Extraordinary Items
£925.90 is the cost of a desk top laser printer which is necessary in order to produce draft material and proof run-outs in connection with the bulletin (and indeed other material such as notices of meetings etc.) Up to now printer time has been "borrowed" from other (commercial) organisations, but this is no longer a feasible option. Like the scanner bought last year, this is an item which will give service for many years.

David Read

The following BVWS Bulletin back numbers are currently available.

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 Salisbury plain 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

Vol 21 Numbers 1, 2, 3, 4

Vol 22 Number 1, 2

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"

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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.

N E W S

1997 Harpenden meetings
The following meetings are all swapmeets with extra attractions and they are: Sunday **8th June**, Sunday **7th September** and the **30th of November.**

Gerald Wells' garden party
Gerry Wells will be having a garden party on Saturday **7th June** at the Vintage Wireless Museum, 23 Rosendale Road, West Dulwich, London SE21 8DS. Telephone 0181 670 3667

Other meetings
4th May: National Vintage Communications Fair at the NEC
13th July: Wootton Bassett
27th July: Audiojumble at the Angel Centre (new venue)
27th July: Sambrook (Radiophile's Summer Special Auction)
21st September: Portishead
12th October: Southborough Radiomeet
12th October: Shifnal (Radiophile Swapmeet)
26th October: National Vintage Communications Fair at the NEC
7th December: Wootton Bassett

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**.

This is Two Emma Toc. Writtle Calling!
A play for radio by Tim Wander.
At 8 o'clock in the evening of St. Valentine's Day 1922, five young men wait nervously. In a wooden hut on the edge of Writtle village in Essex the Marconi wireless engineers prepare to launch Britain's first regular radio broadcasting station. Its callsign 2MT or 'Two Emma Toc' was to become famous. The success of the first night, and the subsequent broadcasts led directly to the formation of the BBC and broadcasting as we know it today.

Station 2MT at Writtle was to break new frontiers in radio, writing the rule book and then tearing it up again for all broadcasters who followed in its footsteps. The technical excellence of the Writtle Wireless station was combined with a unique sense of humour, innovation and sheer fun that bubbled over the airwaves - quite exceptional for the world of 1922.

The new radio play tells the Writtle story of 1922 from the closedown of Chelmsford's high power tests to the formation of the British Broadcasting Company.

The play recreates broadcasts from radio station Two Emma Toc in part drawing on the actual script of programmes that went out 70 years ago and are still fresh and alive today. The very first nervous evening didn't go very well, but later, with Peter Eckersley in full flow, the flavour, fun and outlandish humour of Two Emma Toc will be heard again.

The play is sixty minutes - Cassette copies available for 6.95 including postage and packing. Cheques payable to "SSC", c/o PO BQX 2562, Earls Colne, Essex, C06 2TA.

Bulletin Index
The Bulletin Index is currently available up to issue 22/1 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 with a cheque for £2 payable to Pat Leggatt at 28 High Park Road, Farnham, Surrey, GU9 7JL. His telephone number is 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 towards 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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The Vintage Wireless Listing
Published regularly, containing hundreds of out of print, old and collectable wireless and TV books and magazines, and now incorporating 'The Vintage Hardware List' that contains for sale- vintage domestic radios, communications receivers, audio equipment, valves, vintage components, etc. Send six first class stamps for current catalogue or £3.00 for the next three catalogues

New Books

Vintage Radio Valve Line-up Guide, 1930s 1950s: This invaluable book contains the valve line-up and replacement guide for hundreds of radios, pre-war and post-war. 118 pages. **£12.50** including p&p

Ex-Gov't. Valve and Semiconductor Equivalent guide: Contains an up to date fully comprehensive guide to British and American service valves and semiconductors. **£7.50** including p&p

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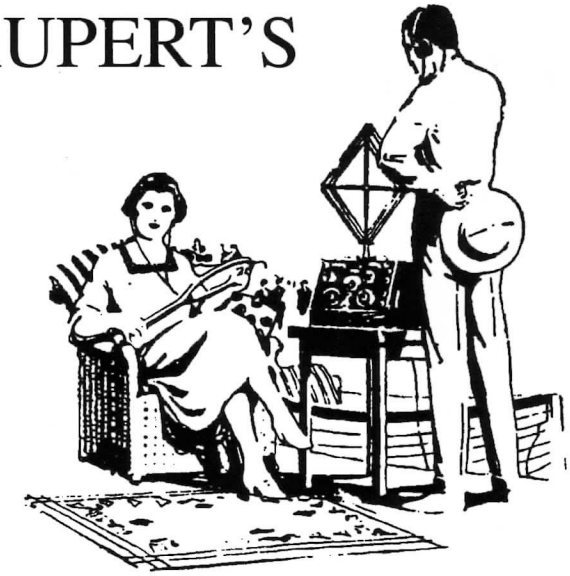

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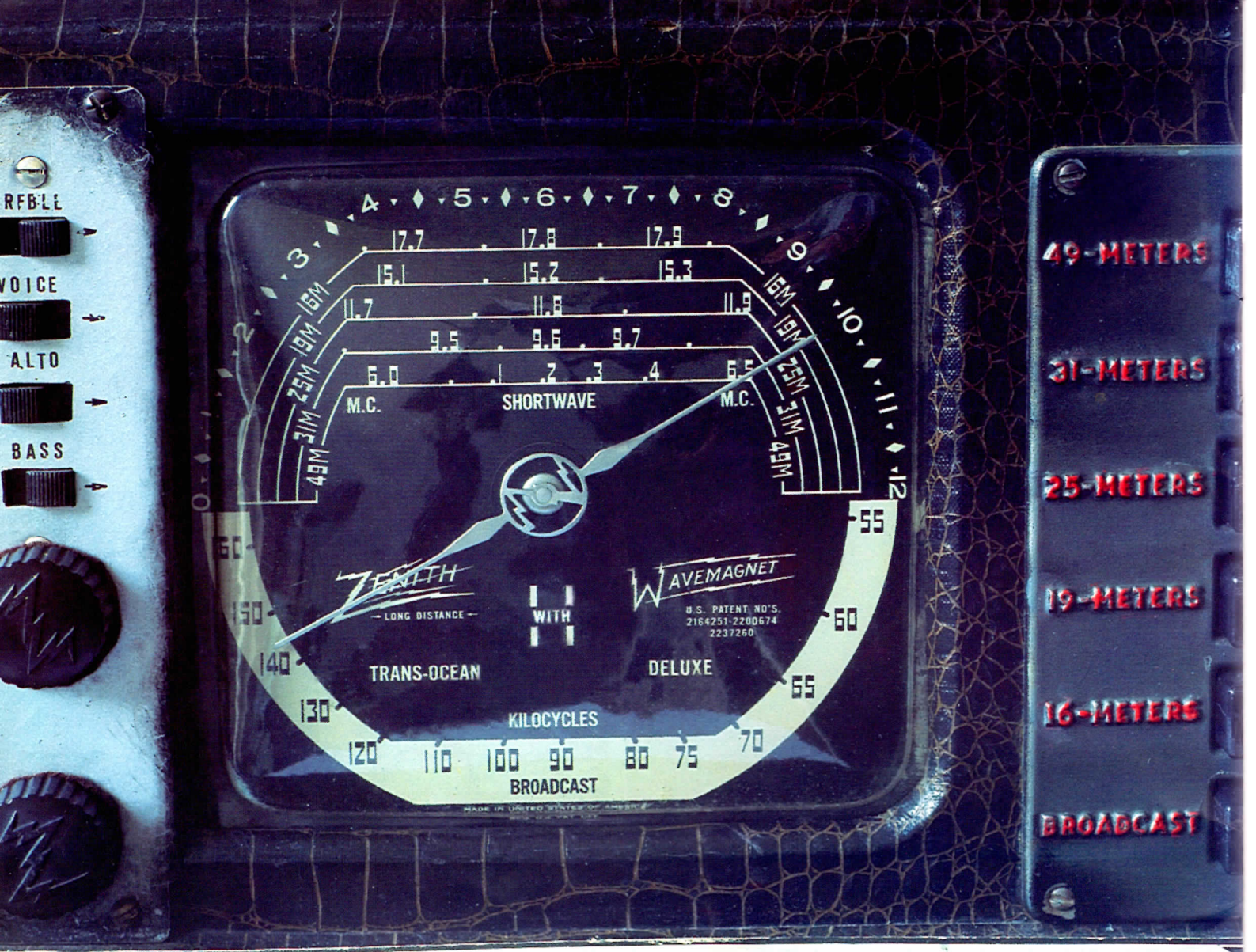
Telephone 0181 670 3667

Proprietor: Gerald Wells. Please make appointments beforehand



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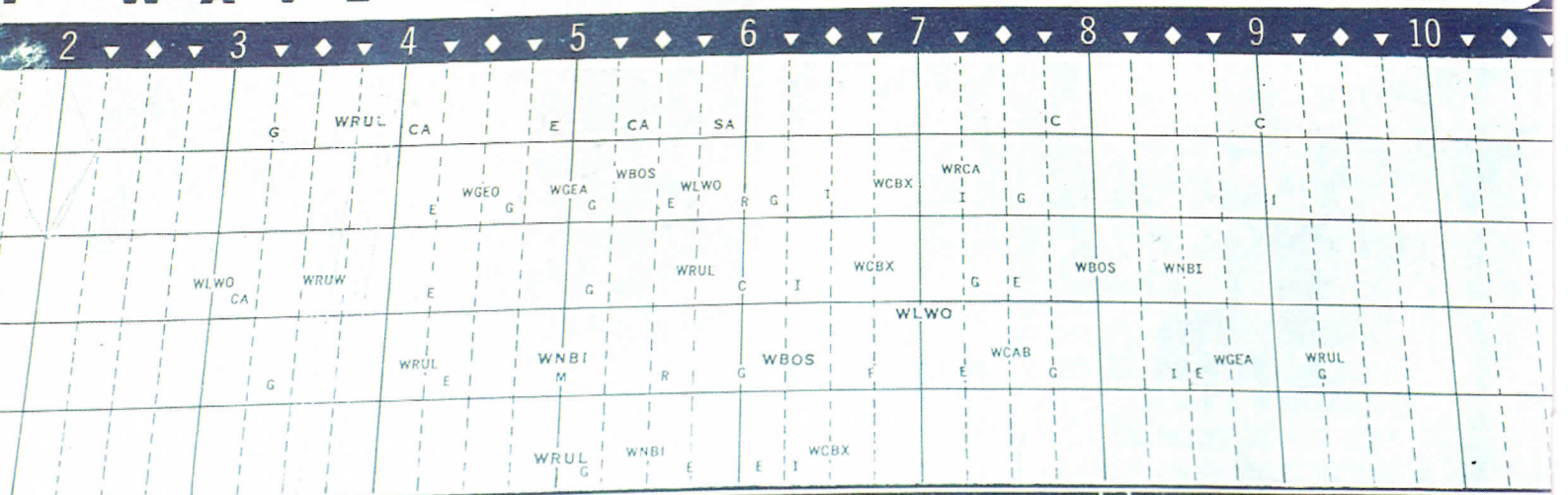

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31 MET.	9.65	9.67	9.53 9.55	
25 MET.	11.83	WRCA N.Y. 11.89		
19 MET.				
16 MET.	17.83	17.78		

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