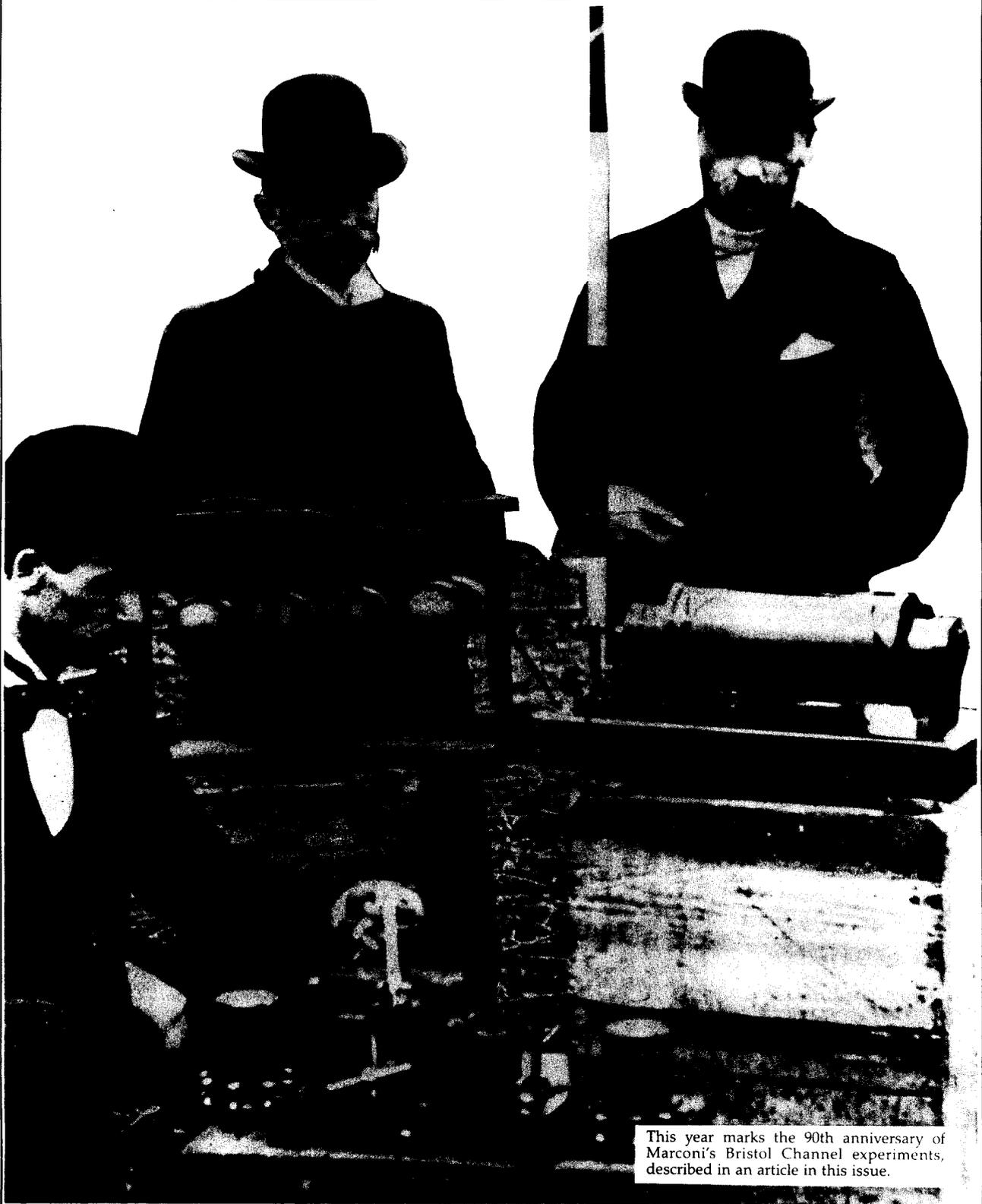


BRITISH

VINTAGE WIRELESS

SOCIETY



This year marks the 90th anniversary of Marconi's Bristol Channel experiments, described in an article in this issue.

Bulletin of the British Vintage Wireless Society

BULLETIN OF THE BRITISH VINTAGE WIRELESS SOCIETY

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BRITISH VINTAGE WIRELESS SOCIETY

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News

From the Treasurer

We now have a clear idea of future costs for "Vintage Wireless", in the style and of the size and quality our Editor, Bob Hawes is now mailing to members. This "new look" BVWS Bulletin has been favourably received by innumerable members, not only for its improved quality, but also for the extra material incorporated because of the more efficient use of space by proper typesetting. The reserve of funds which enabled us to start the Bulletin on this new course is now nearing exhaustion, and the costs of future issues must be matched by revenue from subscriptions. It is the financial policy of your Committee to return to members in the shape of the Bulletin practically the whole of the subscription, and I estimate the present Bulletin costs as being very close to £10 per member. The Committee have therefore decided that the subscription rates for the *Membership year 1 April 1987 to 31 March 1988* shall be: £10 for UK members, £12 for European members and £15 for "Worldwide" members. Members may find some consolation in the fact that the subscription has been held at its present level for two years, despite national inflation. I think that a number of members have paid this year's subscription twice. Anybody who thinks that this is so, please write to me, enclosing a SAE, and I will check the accounts. It will help if cheque dates can be quoted to me, or clearance dates from your statements; and please say whether you would like the overpayment returned, or set against the 1987-8

subscription amount due. A few members have *intentionally* paid their 1987-8 subscriptions in advance unsolicited at the 1986-7 rate. Please will these few send me the additional amount due to top the amount up to the revised subscription rate, or request the return of their prepayment, as they may wish. Renewal notices are being sent with this issue. No further Bulletins will be sent after volume 11 number 4 to anyone who has not renewed. *Every* membership is due for renewal on 1st April 1987 *irrespective of individual dates of joining.* (Desmond Thackeray).

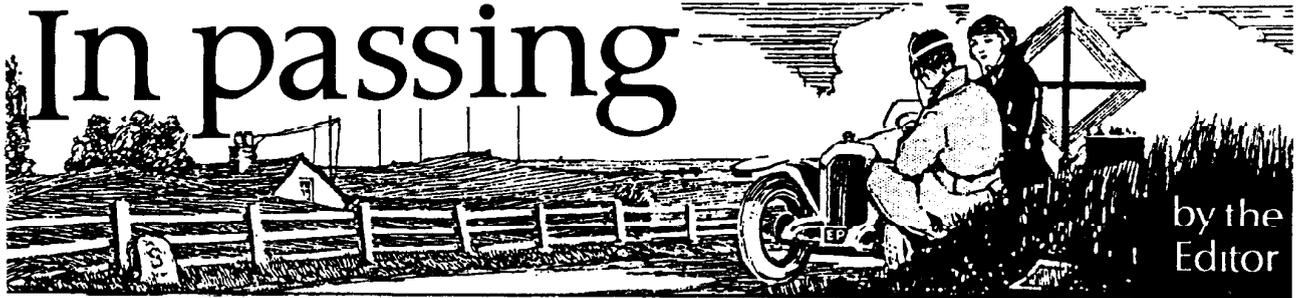
American meeting

The annual meeting of the American Antique Wireless Association is being held this year at Canandaigua (near Rochester, NY State) from 23-26 September inclusive. Will any members wishing to join a BVWS visit to this meeting please contact Tony Constable on (01) 997 7564.

Radio amateurs

Douglas Byrne of Ryde (G3KPO/GB3WM) tells me that American Antique Wireless Association members are almost all radio amateurs and wonders how many we have. He suggests a list in the Bulletin of members' call-signs to enable them to meet on the shortwave bands. Douglas is to be found on 80 metres at 10am on Sundays and he uses an "antique" all-valve Swan 260 Cygnet: "None of your all-singing, all-dancing black boxes from the Far East for me" he says. Members interested in joining a list should write to the Editor.

In passing



by the
Editor

Correspondence for the Society's Bulletin should be addressed to The Editor, Robert Hawes, 63 Manor Road, Tottenham, London, N17 0JH. Telephone: (01) 808 2638.

Too Commercial?

There have been some criticisms that our Society's meetings have become rather too "commercial" of late. It is certainly not the intention of the committee that this should happen and it is appropriate to remind members, particularly perhaps new entrants who may not be wholly aware of the Society's Aims and Objects, that our primary purpose is to promote the study of wireless history and encourage the preservation of early equipment.

Our swap meetings were originally inaugurated to enable members to meet and discuss their common interest, to exchange information, to swap or buy and sell items between themselves and to help each other out by locating hard-to-find items and pooling their expertise and data resources. This is still very much the spirit of our meetings. Inevitably, every collector tends to become a "dealer" in a small way, for the more hardware he finds, the more he has surplus to his own requirements, so he seeks to dispose of some. If he is fair, he will sell at not very much more than his cost price, with a little to compensate him for his trouble in finding and restoring items, and the Society ethic has been for members to have a "special" price for each other which would not necessarily be the commercial value. When it comes to "dealers" though, one might paraphrase Oscar Wilde and describe them as "people who know the price of everything and the value of nothing". But this is not true in all cases: certainly we have respectable members of long standing who are dealers, who of course have to charge commercial prices to make a living. But in these cases the test must be whether they are good Society members who have something to contribute to it either as direct service or in giving advice and help to fellow-members: they might, for instance be of great value in authenticating objects because a great amount of equipment has passed through their hands, or they may be able to locate things because of the contacts they have acquired, or perhaps be able to offer technical advice. In such cases there can surely be no objection to having dealers in the Society and it might in fact be seen as an advantage. But there must be wireless enthusiasts first and dealers second. We must surely discourage entrance to people whose interests are purely profit-

making: we are not seeking to organise commercial markets.

Annual meeting

Our November Harpenden meeting, which was also our AGM, attracted more people than ever - a total of around 300 - and there were 66 tables, piled with apparatus for sale and swap. Despite appeals, too many people arrived before the appointed time, congesting the entrance and causing an impromptu and unauthorised fleamarket in the street, which was to be deprecated. The official business of the day, conducted with our customary and popular brevity, resulted in re-election of the committee and the treasurer reported that the Society was solvent but would need more funds for the new year (members wishing to have a copy of the accounts should send an SAE to him). The end-of-the-day auction was a great success, thanks to the efforts of members including Tony Constable, Roger Snelling and Jim Butterworth, the 63 lots sold for members plus gifts raised £370 from which the Society gained £80 commission for funds. Tony Constable suggests the auction should go "Up-market" but at present it is a useful service to members wishing to dispose of "junk" and a good fund-raiser. Membership was reported at 540 (it has since risen to 582).

Regional Meetings

Dates to note in your diary for Society meetings are: 1st March Bristol, 10th May Shifnal nr, Telford, 28th June Harpenden, 25th October Harpenden. All these meetings are for members only, so if you wish to attend, it is vital that you renew your subscription, due as always on 1st April for every member irrespective of the original date of joining. Tickets for meetings must be applied for in advance.

Thanks are due to Geoff Hanham for again arranging a Bristol meeting on 1st March at the same venue as previously: Clarence House, Portishead, from 10.30am until 4pm. Thanks are also due to Ray Holmes for arranging our first Midlands meeting, at Shifnal Village hall near Telford, Shropshire, which is from 10am until 4pm. Ray suggests members might like to make the trip a whole weekend and take in surrounding places of interest. He can suggest places to stay if you contact him on 0952 594590.

Data Protection Act

Members may be aware of the Data Protection Act which requires that people have the right of access to data held about themselves. In common with other clubs and learned societies, the BVWS is seeking exemption from registration since the data on computer is no more than names and addresses for membership administration and mailing of the Bulletin. Members are therefore asked to sign their agreement to the exemption and will notice that application and renewal forms have been revised to this effect.

Membership List

At the last AGM several members expressed an interest in having copies of the BVWS membership list. The Committee has discussed the matter in considerable detail without being able to arrive at any definite conclusion. There are many arguments for and against the widespread dissemination of the list with all the obvious implications of confidentiality and security. Before coming to any firm conclusions we will bring the matter up for further discussion at the November AGM, but as an interim measure, members who are very anxious to acquire a list are invited to write to the Committee Chairman stating clearly why they need it. Requests will be dealt with individually and lists may be provided in cases where it is felt there will be no misuse of information.

BVWS Posters

Members will be pleased to hear that the splendid wireless posters, drawn by Norman Jackson for our Victoria and Albert Museum "Wireless Show" and out of print for some time, are again available in an edition to mark our 10th Anniversary. There has been a large demand for these long-awaited posters which depict the development of domestic sets from 1922 to 1956. Copies will be available at Society meetings and by post from The Membership Secretary, BVWS, 23, Rosendale Road, West Dulwich, London, SE21 8DS. The price to members is £4 per set of three posters, and to non-members £5, plus 50p post and packing. Cheques should be made payable to the "BVWS" and a clearly-written self-addressed sticky-label should be sent. Please allow 14 days for delivery.

Books

Review:

"British Television: The Formative Years" by Professor R.W. Burns, published by Peter Peregrinus Ltd, Southgate House, Stevenage, Herts. SG1 1HQ, at £48.

Professor Burns' new book on the history and development of television is the latest in the IEE History of Technology Series and is produced in association with the Science Museum in time for the 50th anniversary celebrations of the setting up of the world's first high-definition television station at Alexandra Palace in November 1936. With such an impressive pedigree, one would expect a serious authoritative piece of research, a sharp-witted analysis of all the important source material on the subject and a reliable reference work. That is exactly what he has provided.

As such, one would not expect the book to read like an Agatha Christie thriller but although there are inevitably dry and meaty areas which the general reader may find heavy going, there is a surprising amount of material which is easily accessible and even fascinating and amusing. But the book does have one quality of a good "Whodunnit", in the sense that it tracks down the facts and clears up a few of the mysteries of the subject.

The author's diligent and careful research is important in establishing facts and settling some of the problems presented by the available literature; but it does not substantially change the 'already well-established concept of the history of television. What it does achieve in good measure is to provide a large amount of important detail, much of which has been newly researched or freshly assessed. It provides a self-contained reference book of great value as well as being a key to the important literature on the history of television.

Professor Burns has been anxious to present an accurate and unbiased account, based upon mainly written primary source material (although there is inevitably a little hand-me-down information). He has attempted to verify "facts" and generally goes in for comparative analysis rather than speculation. This scholarly approach provides an enormous advantage to the critical reader, who is given an astonishing 900 references in a volume of just under 500 pages: quite a prodigious feat.

The work traces the history of British Television for home reception from 1923 to 1939 when the Alexandra Palace transmitter was closed down for the war years.

The first chapter "The Birth of Television 1923-1923" describes Baird's early work and relates it to earlier ideas and dis-

coveries, followed by a survey of the efforts of other workers in the field and leads in to a short chapter on relations between Baird and the BBC, and then a section on the important demonstration of 1928 and the start of the experimental service in 1929. Developments at home and abroad are detailed next, leading up to the appearance of Baird's competitors and the setting up of the London station for the pioneering broadcasts by Baird and his arch-rival Marconi-EMI which resulted in his defeat and the virtual demise of mechanical television in favour of the electronic system. There follows an outline of the work of the Television Committee. The final chapter deals with the television service from 1936 to 1929. The whole is well illustrated with diagrams and photographs (many of which it would have been nice to see reproduced larger and on better paper to give improved quality).

At £48, the work is probably too expensive to find a place on the bookshelf of the average technical reader, but certainly every serious student of the subject will want to have access to it, so it is an essential requirement for public and university libraries. **Robert Hawes**

Review:

"Radio! Radio!" by Jonathan Hill, Hardback version signed and numbered by the author £18 or softcover £12.95, both plus postage: £2 (UK) Sunrise Press, 2-4 Brook St. Bampton, Devon, EX16 9LY.

Jonathan Hill's book was delayed, but no disappointment. It is well laid out and he has wisely chosen to set it in chronological order, starting in the 18th Century with a chapter on Early Developments and continuing with Wireless Telegraphy and Telephony in the pre-broadcasting years. Thereafter he devotes a chapter to each decade from the 1920s to the 1960s, each decade followed by its own pages of illustrations. The comprehensive index, too, is divided in similar chronological fashion.

The author keeps two main threads running. Having set the scene with his pre-broadcasting chapters, he traces the beginnings and continuing expansion of broadcasting through the years; and he parallels this with the development of domestic receivers, valves and other components, general construction and appearance. The emphasis is on broadcasting and reception in the UK, but he does not neglect relevant international matters such as Wavelength Conferences and English-language broadcasts from abroad such as Radio Normandie and Radio Luxembourg. Television also gets its share, from Baird's first experiments in

1923 to the post-war development of nationwide BBC and ITV colour services.

The text is excellently written and eminently readable, with a nice balance of technical detail, information on manufacturers, and aesthetic aspects of receiver design together with consideration of the relevant social background. Sensibly enough in a historical review there is fuller treatment of earlier years, with the 1920s getting 30 pages, decreasing to 9 pages on the 1960s. It is clear that Jonathan has researched his subject very thoroughly and his comprehensive treatment covers virtually everything that one would like to hear about.

There are 1,000 photographs, including 240 of receivers from the '20s; 350 of the '30s; a gallery of 90 photographs of loudspeakers; and a panel of 40 pictures of valves from the '20s up to the '50s. All the illustrations carry detailed explanatory captions and altogether this represents a rich harvest. **Pat Leggatt.**

Review

"Dublin calling" by Paddy Clark, published by Radio Telefis Eireann, Broadcasting Museum, 27-29 Lower Rathmines Road, Portobello, Dublin 6, Eire, at £3.95 plus postage.

Most people will have heard about the pioneering transatlantic cable from Valentia Island Country Kerry in the mid 1800's and of how Marconi made the world's first commercial use of wireless just before the turn of the century—but the later history of wireless broadcasting in Ireland is less well known. Paddy Clarke, curator of the RTE broadcasting museum in Dublin, who is well known to Society members, has just produced a delightful book on the subject which is entertaining as well as informative.

Paddy has collected a good selection of the domestic wireless hardware available in Ireland in the 'twenties and 'thirties as well as broadcasting equipment, literature and ephemera in the museum he has built up in Dublin, but perhaps just as importantly, he has become quite famous as an expert on his subject and as a researcher who travels widely in his quest to collect recordings of the reminiscences of Irish folk who still remember the early days of wireless. (A pursuit which might well be encouraged among preservationists in other countries, for it receives much less attention than the preservation of wireless apparatus but is surely of equal importance to social historians?) Paddy manages to pack a lot of information into sixty pages and illustrates his book with over 70 photographs of people and places connected

continued on page 38

Historical Research

This year marks the 90th anniversary of Marconi's Bristol Channel transmissions – the first over water, between South Wales and a little island in the channel, and then to a peninsula on the outskirts of Weston. Here, *Eric Westman*, a former resident of Bristol, pieces together some of the scanty information on the subject. Little seems to have been written about what Eric describes as "Marconi's forgotten transmission".

Marconi's "Forgotten" transmission

by Eric Westman

Few people know that Bath has an early link with Marconi, and that the city was the recipient of his farthest transmission at that time. The 22-year-old Italian had in 1896 already demonstrated his invention to Mr (later Sir) William Preece, the Engineer-in-Chief of the British Post Office, over four miles on Salisbury Plain. And in May 1897 he had spanned the eight miles across the Bristol Channel.

Then, in September of that year, Marconi made his longest-yet transmission – the 34 miles from Salisbury Plain to Bath. Three Mile Hill on Salisbury Plain was the probable transmission point, with reception at Lansdown, above Bath. The only contemporary record of the event appears to be a brief and inaccurate mention in the "Bath Journal" of 2nd October 1897. The experiment was a joint affair of the Post Office and the War Office, and a Post Office official was sent to set up the receiving apparatus at Lansdown, though he appears to have had a squad of Royal Engineers to help him.

At both the transmitting and the receiving end, Marconi's aerial was raised by a man-lifting kite, almost certainly lent by Capt Baden-Powell of later Boy Scout fame, who had taken part in the original Salisbury Plain tests. He had developed such kites for artillery spotting.

The kites each consisted of three poles 12 feet long; one acted as a "backbone" while the other two were attached as crosspieces two feet from each end. Covered with 120 square feet of fabric, the kites were roughly hexagonal in shape and had no tails. The kite "string", which also served as the aerial, was an enormous length of piano wire tethered to a high pole.

(Although nothing to do with Vintage Wireless, it is interesting to learn that B-P used five of these kites together with a wicker basket to lift a man. If there was no wind, to launch the kites he tethered the string of five together with the basket to a horse, and then sent it galloping



Post Office engineers inspecting Marconi's apparatus during the Bristol Channel tests of 1897. (Photograph by kind permission of The Marconi Co. Ltd.)

down the field. On one occasion the rope caught around his left ankle and he was jerked upside down into the air hanging by his foot.)

According to a 1926 reminiscence of the events at Lansdown by one of the party, the kite was successfully launched and soared to 200 feet. Soon, the excited party heard the tic-tac of the Morse recorder as it spelled out the messages as they came through from Salisbury Plain: it was the greatest distance that Marconi had yet spanned. Abruptly, jubilation turned to dismay, for a sudden gale sprang up and the aerial wire snapped at the pole. Away blew the kite, trailing behind it half a mile of wire that dragged along the ground, frightening workers in the fields. After, it chased the members of the experimenting party. At the end of a six-mile flight, the kite plunged to earth near a cottage, whose acquisitive inhabitants rushed out to collect it and speedily secreted it in an outhouse. When the rescue party arrived and demanded their kite and wire, the cottagers refused to give it up, maintaining that "finding is keeping". Threats of being charged with stealing Government property persuaded them to reluctantly hand it over.

So ended Marconi's record-breaking 1897 transmission from Salisbury Plain to Bath. It is probable that he employed the same transmitter that he used to span the Bristol Channel a few months previously. This consisted of a Rhumkorff induction coil connected to a Righi oscillator of four brass spheres in line. The secondary winding of the induction coil was connected to the two outer spheres, so that the spark had to bridge the three gaps in the aerial-earth system. Eight two-volt accumulators powered the induction coil.

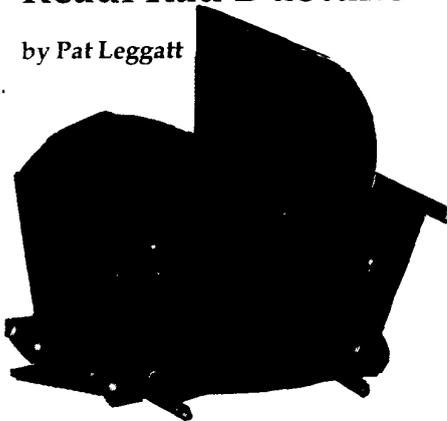
Marconi's receiving apparatus was "of the simplest description, consisting chiefly of a Branly coherer, a Morse inker and a few dry cells"

The names of the Army officers taking part are known: Capt JNC Kennedy, who had already participated in the celebrated Bristol Channel Tests; Capt PW Brett; and Capt Baden-Powell. The 1926 reminiscence was recounted by RG Masaroon, who was probably an NCO in the Royal Engineers party. No memorial was erected on the Battlefields, Lansdown, to commemorate the event, which was sparsely recorded and has remained largely unknown.

Research

Readi Rad Duotune

by Pat Leggatt



While the main concern of most of us is of course to collect complete wireless sets, some old components can be more interesting than appears at first sight.

Fishing in my junk box the other day, I picked out an apparently very ordinary tuning condenser. It was marked 'Readi Rad Duotune' and closer inspection showed it to have some unusual features.

Firstly, the assembly of fixed vanes was

in fact divided into two halves, insulated from one another. The two sets of fixed vanes were meshed by a common set of moving vanes, so here we had an early two-gang condenser. The fully-meshed capacitance of each half was 300 pF.

Secondly, the moving vanes' end-stops were so arranged as to allow 360° rotation rather than the normal 180°. What could be the point of this? The clue seemed to be given by the presence of a cam attached to the rear of the moving spindle. It seems probable that this cam is intended to operate a wave-change switch (not present on my device), so that each 180° of rotation would cover a different waveband. One is reminded of the system of 360° tuning control rotation, with switched changeover to a different wavelength range half way round, found on the Marconiphone Type 21, 31 and 41 receivers; although with these the control of tuning is by variable inductance.

Thirdly, the fixed vanes of the condenser were of very unusual shape, as shown in the diagram. The moving vanes, and the main part of the fixed vanes with which they meshed, were of the standard shape to give linear

change of wavelength with rotation: but what was the purpose of the oddly-shaped extension of the fixed vanes?

The explanation is, I think, that if there were no extension, the linear wavelength law would not be maintained during the second 180° of rotation when the moving vanes are coming back into mesh with the fixed vanes in what one would normally regard as the wrong direction.

The extensions of the fixed vanes give additional meshing with the moving vanes at the low-capacitance end of the travel, and thus maintain the desired linear wavelength law.

One last little feature I found ingenious. The end-stops of the rotor travel are provided by an elongated grub screw on the rotor spindle coming up against a projection on the condenser chassis. A shortcoming of this method would be that the thickness of the grub screw would prevent a full 360° rotation being achieved. To get over this problem, the projection stop is mounted on a small arm which is pivoted so that it can move a distance just equal to the grub screw diameter. Thus the end-stop position is different for the two possible directions of rotation and a full 360° is obtained.

Books *continued from page 36*

with radio as well as illustrations of some of the objects in his museum, plus drawings. The old photographs of people look especially good in the sepia printing-ink he has chosen which gives them an extra air of antiquity, but it reduces the contrast of the equipment photographs somewhat.

The book traces the history of Irish broadcasting from the establishment of the early shipping wireless-telegraphy stations to the appearance of the first domestic receiving sets of the early twenties on which people listened to broadcasts emanating from abroad, to the establishment of the first Irish national station in 1926. The Irish were a little late in beginning broadcasting because of the political troubles there, but in a sense, they could claim to have "broadcast" as early as 1916, for (as Maurice Gorham points out in his 1967 history), the men who planned the Easter Rising on 1916, conscious of the fact that the British Government ruled the air-waves, set up their own wireless station and sent out their own news on the shipping wavelength, hoping ships at sea might relay it to the United States; transmissions were only in morse—but the idea of "broadcasting" a message rather than to a single targetted receiver

was new at that time. But if the opening of 2RN had to wait until 1926, there was plenty of talking and planning and experimentation going on for some years before that, as Paddy details in this most entertaining book. — **Robert Hawes**

Book Reviews:

"The Golden Age of Radio in the Home" which traces the history and development of radio from the crystal set to the first transistor. Of large format, excellently produced with 164 pages and 600 photographs, it comes from the pen of John Stokes, Editor of the New Zealand Vintage Radio Society Bulletin who is much respected for his earlier work "70 years of Radio Tubes and Valves", which has become an important standard work. Although his new book focusses on radio in New Zealand, and mainly features the hardware in use there during the period (not a great many English-made sets were imported) it is of interest to enthusiasts in other parts of the world as a general commentary on radio history. Written in non-technical language, it makes entertaining reading. The book is obtainable direct from the author at £14.50 including postage by surface mail: J.W. Stokes, 281C Hillsborough Road, Mt. Roskill, Auckland 4, New Zealand. Readers may also enquire for copies from English wireless book dealers. — **Robert Hawes.**

"Collecting: The Passionate Pastime" by Susanna Johnston and Tim Beddow, with a foreword by Bamber Gascoigne, published by Viking Press, 27, Wrights Lane, London, W8, at £14.95 is an entertaining and engrossing bedside-book about collectors rather than collecting, amusingly written and illustrated with beautiful colour photographs. The collectors and collections featured are astonishingly varied, from a reverend gentleman who collects huge steam engines to a director of a posh auction-house who loves old lawn-mowers; and lots of other interesting characters who have a passion for toy soldiers, milk bottles, police truncheons and even a man who collects curios the purpose of which is entirely unknown. But the wireless interest in the book is a fascinating and often hilarious account of how Gerald Wells, membership secretary of the British Vintage Wireless Society, caught "wirelessitis" as a lad and set about filling his home with getting on for a thousand wireless sets, finally turning it into his Dulwich museum. — **Robert Hawes.**

Editor's note: Because of the number of books recently published on wireless-related subjects, individual reviews have had to be curtailed. It is hoped that extended reviews of some of the books may appear in a subsequent issue of the Bulletin.

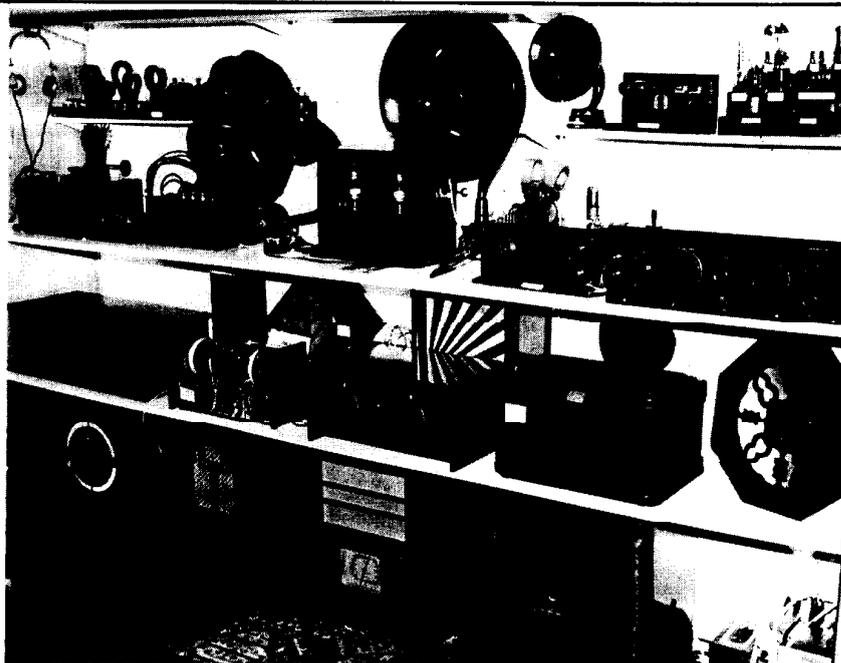
Museums: Preservation philosophy

Wireless museums seem to be proliferating in many parts of the world; mostly small collections in the homes of enthusiasts. Individual collectors have their own ideas on what to include in displays and how much "restoration" ought to be done. Here, a museums expert discusses the problems and offers some suggestions. The author is a member of the New Zealand Vintage Radio Society and some of the places he mentions may not be familiar to readers.

by Robert Hawes

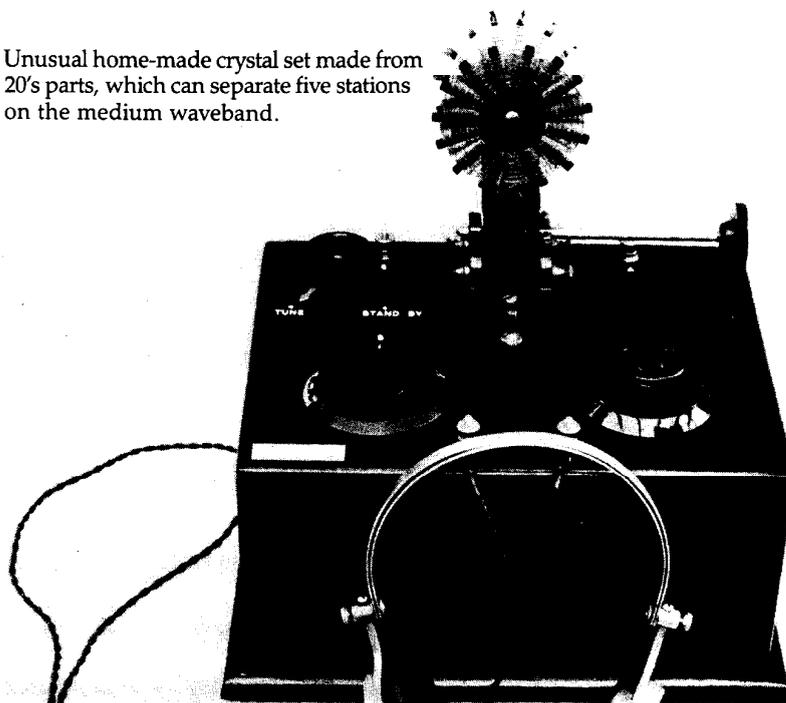
Wireless enthusiasts have many different motivations and various philosophies which lead them to building up their collections: many are interested in "the works" and have no regard for the packaging, while some are attracted to the outward appearance of apparatus. Others are interested in the technical or social history of the subject and collect printed material rather than equipment and are left quite cold by impressive works and pretty cabinets. Many people collect what could be called the "curios" of wireless and others are fascinated by peripheral novelties or by "broadcasting" as a general subject. There must be many more categories of collectors and they are all, of course, entitled to indulge their individual fancies, but the collectors who derive the least enduring interest and enjoyment from their hobby are surely those who are merely Magpies: amassing vast quantities of hardware with no particular philosophy unless it be an ambition to possess the biggest heap, or the most complete "set" or possibly the most valuable collection of goodies.

Collectors who have a definite aim in mind probably find more enjoyment than those whose acquisitions are haphazard. Readers are invited to contribute their ideas to the Bulletin. One idea, which is probably shared by many members, comes from *Bill Williams* of the West Midlands, whose collection is partly depicted here. The theme of his collection is "The Evolution of Technology" which covers circuitry, components and construction technique. Rather than acquiring objects and then deciding how to integrate them as a "collection", Bill's theme came first and then he set about illustrating it by the most suitable examples he could find. With such a clear and logical plan, his collection needs only be a modest one:



An entire and representative collection – all housed on just three shelves. Just out of view, left, is a bench with a good selection of tools and test instruments.

Unusual home-made crystal set made from 20's parts, which can separate five stations on the medium waveband.



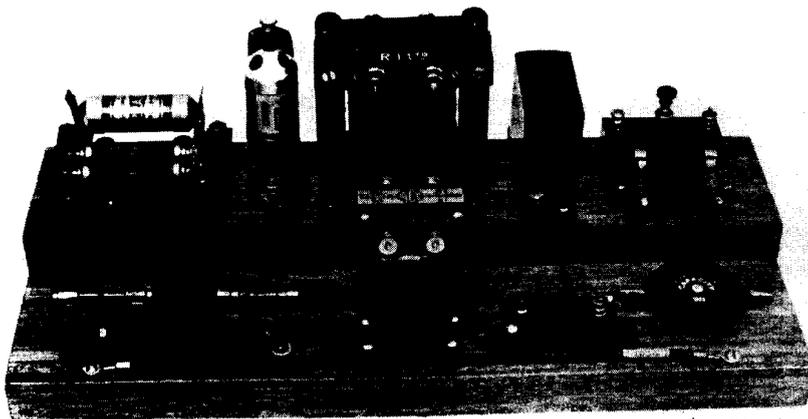
the whole thing is housed on three shelves, each eight feet long and 18 feet wide, yet it is complete. Each shelf represents one era of development: there are 14 sets, 7 speakers and four component exhibits. Everything has a simple descriptive label. Everything works and is wired for instant demonstration (to seriously interested visitors only). The future of the collection? Well, it won't get

any larger, for it was planned to be the size it is, but it may change in quality a little as Bill finds better examples of equipment to represent the "milestones" of development he has chosen to depict. He reckons, for instance, that he can find a better example of an early 'twenties reflex than his V2A.

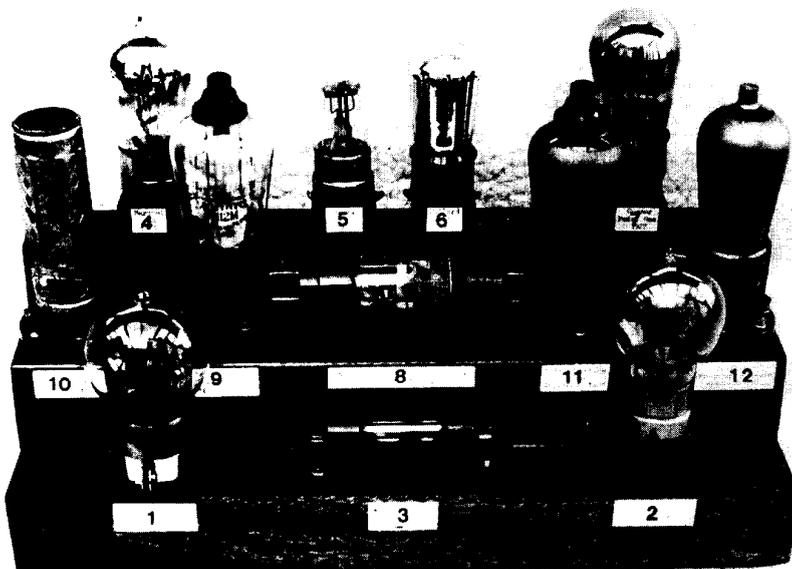
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Picture A



Picture B



Picture C

continued from previous page

Here are the captions he has on his display equipment:

Picture A: The simplest practical broadcast receiver required only a coil to bring the aerial/earth circuit to resonance at the frequency of the transmitter and a crystal to rectify the signal.

Coils were adjusted by a sliding contact or regular tappings and switches. Continuously variable adjustment was achieved by arranging a pair of windings as a variometer. Large changes were often accomplished by exchanging plug in coils.

Simple receivers had little or no means to increase the strength of weak signals. The crystals were a variety of minerals both natural and synthetic.

Picture B: With these additional component types, receivers of improved sensitivity and selectivity using valves to provide amplification, could be constructed.

Early resistors were usually either carbon composition in ebonite or glass tubes or wire wound on bobbins. The spaghetti resistor at the front combined the functions of wire wound resistor and interconnection wire. The two hexagonal tubes are mounted integral with a capacitor to form a resistance capacity coupler (early circuit integration). The long cylinder is a variable grid resistor containing carbonised paper discs compressed by a screw to adjust the resistance.

Two interval transformers are shown. Early radio capacitors usually used copper foil and mica for small capacities and aluminium foil and paper for large capacities.

Picture C: Valves: The development which made broadcasting practical. The display shows significant stages in the evolution of the thermionic valve from 1915 soon after the first practical devices were produced in quantity to the mid 1930s. Items include: Early American type with planar electrodes; cylindrical electrodes, Myers valve for reduced feed back; low consumption oxidised coated filament type; Bakelite base gettered valve; double ended screened grid valve; Metal envelope valve; Multi function.

Picture D: Mid-20's "state of the art" high-performance 7-valver by McMichael Hesketh, representing the ultimate in sensitivity and selectivity which could then be realised. It used the most advanced circuitry of the period and was a considerable rarity in an era when crystal sets were the dominant form and the superhet would not gain general acceptance as a broadcast receiver for nearly another decade.

continued on next page

continued from previous page

Picture E: The penultimate development of the TRF. A four valve plus rectifier a.c. mains set having many innovative design features. Believed to be the first receiver with station names on the tuning dial, it has simple two knob controls with a novel automatic wave band change, operated from a continuous rotation tuning mechanism and is housed in an Art Deco bakelite case.

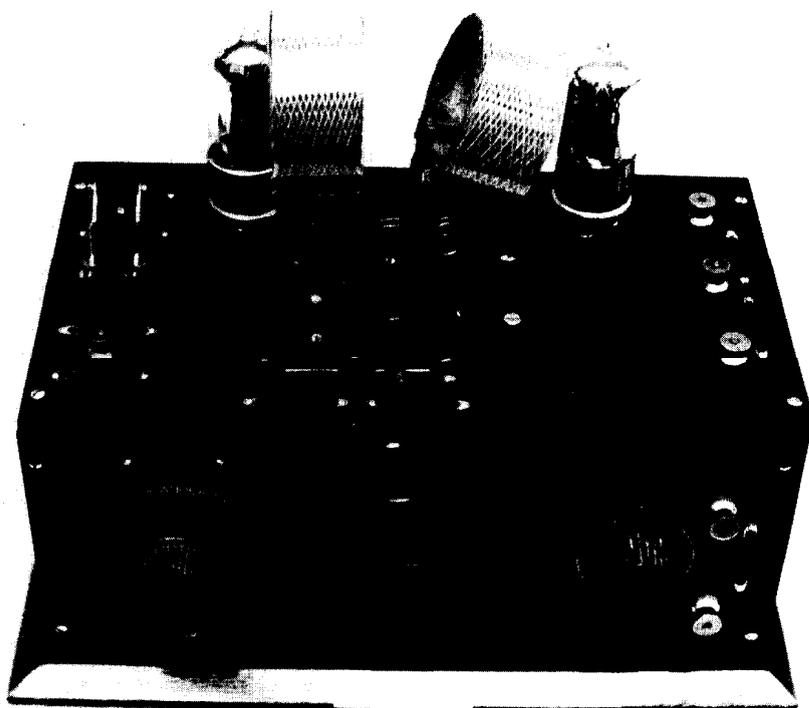
Circuitry features two tuned H.F. amplifiers with variable gain and aerial attenuator controlled from a single knob to combine high sensitivity with good strong signal handling. H.F. positive feedback (factory pre-set) is used to enhance selectivity and A.F. negative feedback to reduce distortion (Ultra linear output stage).

An energised, low impedance, moving coil loud speaker mounted inside the cabinet represents a significant advance on external moving iron cone speakers.

Picture F: The Superhet supplants the TRF as the dominant circuit form. The 1933 Marconiphone model 272, a four valve plus rectifier a.c. mains superhet in a wood cabinet with an illuminated slide-rule dial with station names. Four knob control with combined on/off and wave change switch including "gram" position. All valves except the rectifier are "Catkin" metal-envelope types.

Circuitry features a cathode injection screened grid frequency converter and a variable mu IF amplifier with manual gain control ganged to an aerial attenuator (No A.V.C) and a grid leak second detector. A low IF (125 KHz) is used with four high Q tuned circuit stagger tuned to obtain a band pass characteristic. The low IF has necessitated special image rejector circuits.

Picture D



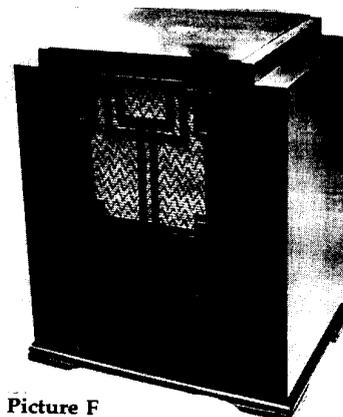
Probably the most popular two-valve circuit arrangement in the mid 1920s was a grid leak detector with reaction, transformer coupled to a low-frequency amplifier. This example is of French origin circa 1925. An unusual feature is the aerial tuned circuit which can be switched from a parallel to a series circuit enabling tuning to both long and medium wavebands.



An imposing Burndept horn speaker with a horn worthy of John Philip Souza.



Picture E



Picture F

The Origin of the term "Radio"

Roy and Kathryn Tucker N6TK & AA6TK of Southern California Antique Radio Society

Presumably everyone knows that at one time the term 'wireless' was popular to describe communication without interconnecting wires, and then 'radio' replaced the term. Not so commonly known is that many other terms had at least a degree of popularity in this realm before being discarded, and a few have persisted to the present. Almost forty words in English are known to the authors as having been utilized, plus numerous in other languages.

Even before the pioneer work of Hertz and Marconi just prior to the turn of the 20th century, wire-less (sometimes spelled wireless) was being spoken to describe the very short range conductive and inductive systems of communication that had appeared as early as the 1830's. Loomis in 1872 when applying for his patent on a method of electrical communication from two kite-bourne antennas referred to aerial telegraphy. Edison spoke of etheric force, referring to the once held belief that all electromagnetic radiation passed through an invisible medium known as ether. As soon as Hertz' work became known it was common to refer to the signal generated through spark gap transmitters as Hertzian waves, a term that has been used to cover true radio waves ever since. For a short while people spoke of Marconi waves. The list grew lengthy and sometimes confusingly as to exactly what was being covered.

The various terms that began to be coined around the idea of wireless communication almost always started as adjectives to modify the term telegraphy or telephony; thus electromagnetic telegraphy and space telephony. Equally the terms were applied to the word communication to cover the overall concept of such a system; accordingly coinages such as wireless communication or air communication. The wave medium used in disseminating the intelligence was also accompanied by the newly coined adjectives as in ether waves, radio waves, and airwaves. In some languages, especially English, the new term became a noun. Instead of

speaking of radio apparatus or a radio receiver, people began to speak of merely a radio. Even verb meaning materialized, such as 'radio this message to headquarters'.

Objections to the originally chosen words came early. Many did not like the fact that each major language had different terms, often literal translations from one to another such as drahtlose in German, and sans fil in French, or senza fila in Italian (for wireless and without wires, accordingly). To many, having to add the noun telegraphy or telephony made the terms excessively long. Also, because Hertzian radiation was the third (but by far most significant) of the methods of communicating without wires, it was felt a new term that would exclude conductive and inductive methods was desirable. Sometimes even light beam communication had been called a method of wireless.

At the Berlin International Wireless Telegraphy Conference in 1906 the topic came up and the new radio was suggested, based on the word radiation and to be spelled the same in all languages. It was to cover only Hertzian waves. The 1912 meeting in London of this same international body (today incorporated within the International Telecommunications Union of the United Nations) came as close to making the term 'radio' official as could be done. The year 1912 seems to be the big breakthrough year in many regards for the term radio; the Radio Act of 1912 provided for the first comprehensive regulation of the new medium in the United States, and the Institute of Radio Engineers was formed in the same year as a merger of previous organizations that both had wireless in their title. The United States Navy that year directed the word radio replace wireless.

The term wireless only slowly died out after 1912 and still had some use at least through the early 1920's in the United States, and has continued in popularity to the present in Great Britain. Once the broadcast boom got underway in the United States, the public more and more began to consider the term wireless to be telegraphy while radio covered telephony. The other terms only had a brief vogue or had specific application for things far less than the overall communications concept. To a scientist, though, the radiation is still by electromagnetic waves and to entertainment and news personnel they have always broadcast (one-way transmission to be entirely correct) over airwaves. When television came along it went the same route as earlier wireless and radio; first the term was used as an adjective but finally it settled down as a noun. Today we

speak of "turning off the television," not having to add the words receiver or set.

More or less interchangeable words as follows have been used in radio's approximate century of existence (including pre-Hertzian wave wireless). Typically they were descriptives to modify words such as telegraphy, telephony, waves, communication, or various apparatus.

1. aerial
2. aerography
3. air
4. atmospheric
5. broadcast
6. electric
7. electrical
8. electricity
9. electro
10. electromagnetic
11. electronic
12. electrostatic
13. ether
14. etheric
15. Hertz
16. Hertzian
17. high frequency
18. induced
19. induction
20. inductive
21. magnetic
22. magneto
23. Marconi
24. Marconism
25. Maxwellian
26. oscillating
27. oscillation
28. radiant
29. radiating
30. radiation
31. radio
32. radio frequency
33. space
34. spark
35. stratospheric
36. wireless or without wires

Notice that three personalities (Maxwell, Hertz and Marconi) are embraced by the terms. In all probability the Russians have coined the term Popovian to honor their claimed 'inventor of radio', Alexander Popov.

The best way to study the evolution of the language is not to consult recently published histories of radio; they will usually have modern-day language. Read publications contemporary with the times and see how the terms evolved from the 1890's to the present.

Regardless of what the term is or was, and how this came about, the subject established by it to many of us is the most exciting ever developed and a most appealing one for collecting and study.

(by Courtesy of Southern California Antique Radio Gazette.)

Guide Notes for Construction of the J.L. Baird, 30-line 'Televisor' Set, in quarter scale.

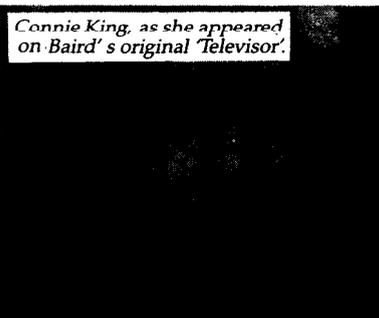
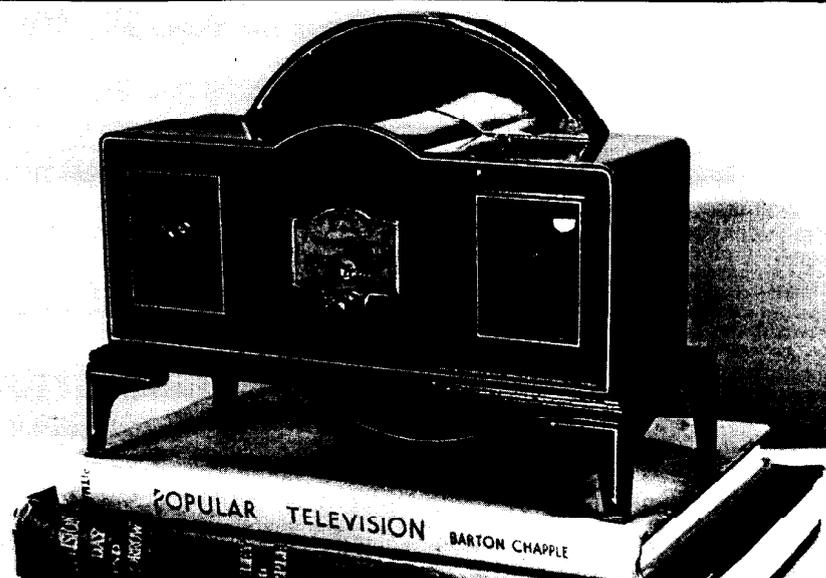
Editor's Note: Baird made a very modest number of his famous Televisors so that if every enthusiast of early television receivers wanted to possess one, there would hardly be sufficient surviving examples to go round. Those not fortunate enough to find one in a rubbish-skip—and there is actually a recorded case of that—would be likely to have fork out something in four figures to buy one at auction. In view of this, readers who enjoy making models might like to try their hand at a miniature replica. I spotted a marvellously lifelike one at a recent exhibition, made by a man who has a strong connection with the original, who here gives instructions for building a 'Televisor', which, although not actually forming pictures, is a working model which at least projects a flickering square of light: which was in fact all that many of those early viewers managed to tune in for much of the time!. Readers who are interested in modelling and restoration who have no interest in building this replica, may nevertheless find the techniques described here useful.

by
Bernard King .

My sister, Connie King, was John Logie Baird's telephone switchboard operator at 133 Long Acre and, due to her talents as a soubrette in my father's concert party, was often employed as a live, singing subject for early television demonstrations. What better reason, therefore, could I have to produce this quarter-scale model of the set on which 'Kingy' appeared.

I had promised myself the model for a long time and the press reception of the 'Television in the Home' exhibition, on 15th October, '86, seemed just the right occasion—or should I say excuse—to actually make the model. For those who would like to make one of these novelties but fear the prospect of becoming involved in a tediously long project, it should be mentioned that the model that caught the eye of your astute editor was only begun just ten days before he saw it at the press reception. It was, in fact, completed in 7 days!

As a spare-time model maker of many years (in the thirties I built model aircraft at Tooting and crashed them at Mitcham) it would be easy to launch into pages of



Connie King, as she appeared on Baird's original 'Televisor'.

detailed instructions. But space does not allow such a luxury so the following are brief guide notes to help inexperienced folk willing to 'have a go'. It should be remembered that what is known as scratch building - that is, building from scratch rather than a kit - is very much a matter of each model maker employing his or her own method of approach. These notes can, therefore, be the starting point for development of your own ideas. This style of model making is entirely a matter of improvisation by the individual but, I am sure, this approach is not alien to members of a practical organisation such as the BVWS.

Materials

There is available in many model shops a polystyrene sheet material from which the 'Televisor' bodywork can be constructed. It is available in thicknesses of 10, 20, 30, 40, & 60 thou. (this range may vary with different dealers). For the main panels of the bodywork I chose the 60 thou for strength, with reinforcement strips on the inside corners. For the curved panels (the rims of the disc housing and the arch over the disc drive motor) 20 thou was found to be just right. The main baseboard can be fashioned from a piece of good quality, 3 or 4 mm birch plywood but note that there is a delicately fashioned edge

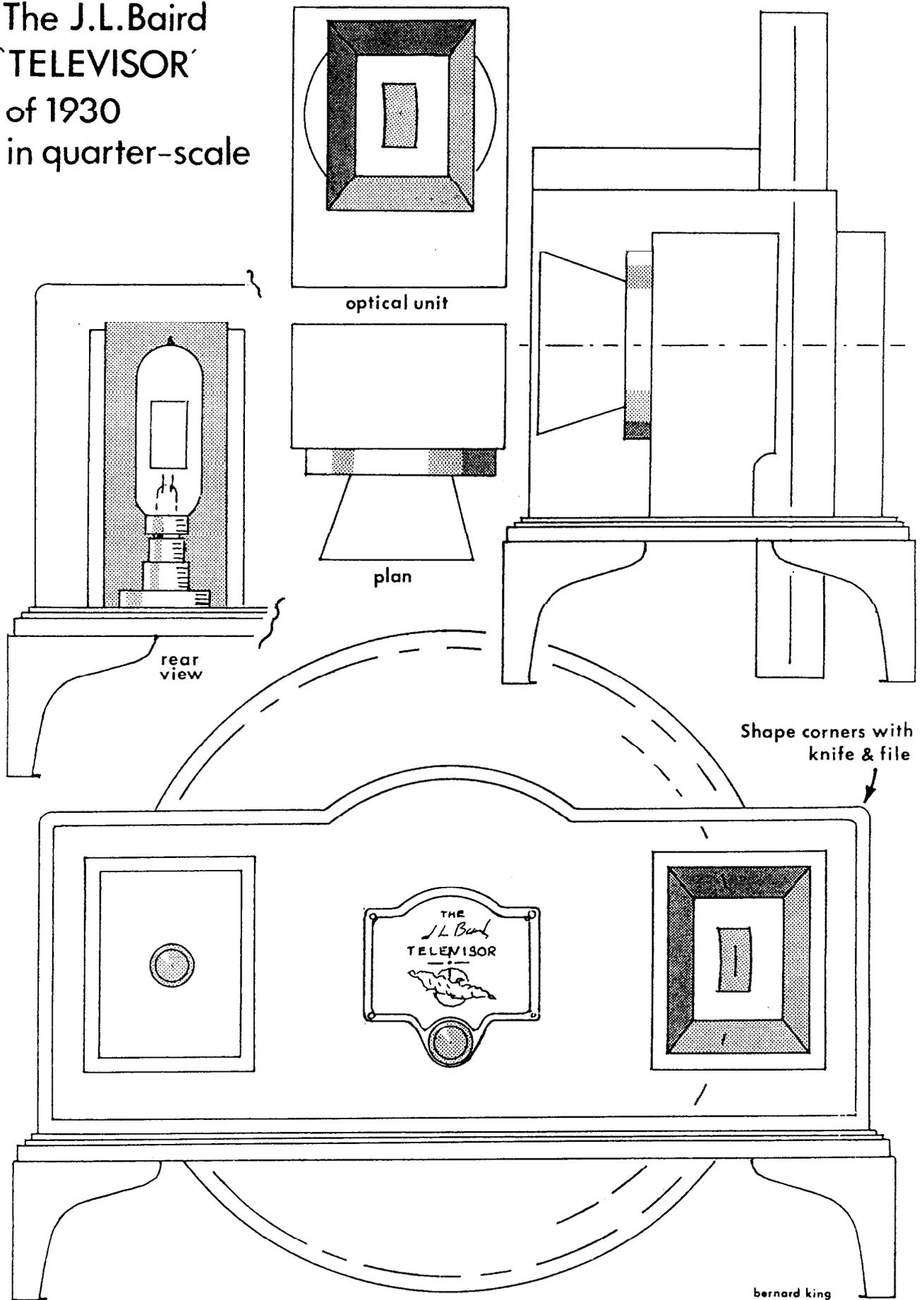
around this base board which is typical of furniture of the period. This can be approximately but effectively simulated by sticking two layers of 1 mm plywood over the baseboard, each of the two layers being 1.5mm less, all round, than the layer below. The two layers will then form a 'step' arrangement. The main baseboard is 173mm x 80mm. The 1mm (or 1/32nd inch), 3-ply, which can be obtained from model shops, is also useful for building the optical unit and the mounting for the drive motor. The 20 thou polystyrene sheet will be found suitable for the scanning disc.

The 'glue' - if that is the right word - for welding the polystyrene sheet is a liquid material. I use 'Plastic Weld' marketed by EMA Model Supplies Ltd., Feltham, Middlesex, but there are, no doubt, equivalents available at model shops as the material is widely used in the model railway world. For joining the wood parts Wood Adhesive is suitable. It can be found in DIY shops in those little green plastic tubs with useful thin nozzle. The electric motor I used has been around the house for very many years but a phone call to EMA Model Supplies confirmed that these cheap-and-cheerful little motors, from the Far East, are still available.

Lenses are a matter of raking around the scrap box. My temporary lens unit is merely an old lens cut down to size with a power tool and a metal-sanding wheel. The 'embossed' Baird logo plate is a black-&-white photograph tinted a 'sepia' tone from a very old book of Eastman Kodak colour tinting 'stamps'. It cannot be pretended that these plates are easily simulated unless photo facilities are available. Perhaps, as an alternative, a little skilful artwork with a crowquill

continued on next page

The J.L. Baird 'TELEVISOR' of 1930 in quarter-scale



Constructional

Vintage Vision

"Make your own Televisor" continued

pen and colour-wash on cartridge paper may help.

Tools

Few tools are needed but those I recommend are (1) a Swann-Morton cutting tool and a fairly fine point (but not too fine). I use No.10A blades. An Exacto tool is an alternative. (2) Small files; a fine rat-tail and a small flat, although the latter can be eliminated by sticking sandpaper to a lollie stick. (3) A steel straight-edge or rule for cutting. (4) A small paint brush like those used in water colour painting. (5) A sharp, steel pricker-point; something like a gramophone needle forced into a piece of wood. (6) Less important but useful for cutting curves in plastic are strong dividers with screw-thread adjustment (not the friction type). (7) A small pin-vice is also a great asset and a useful thing to have around the house anyway.

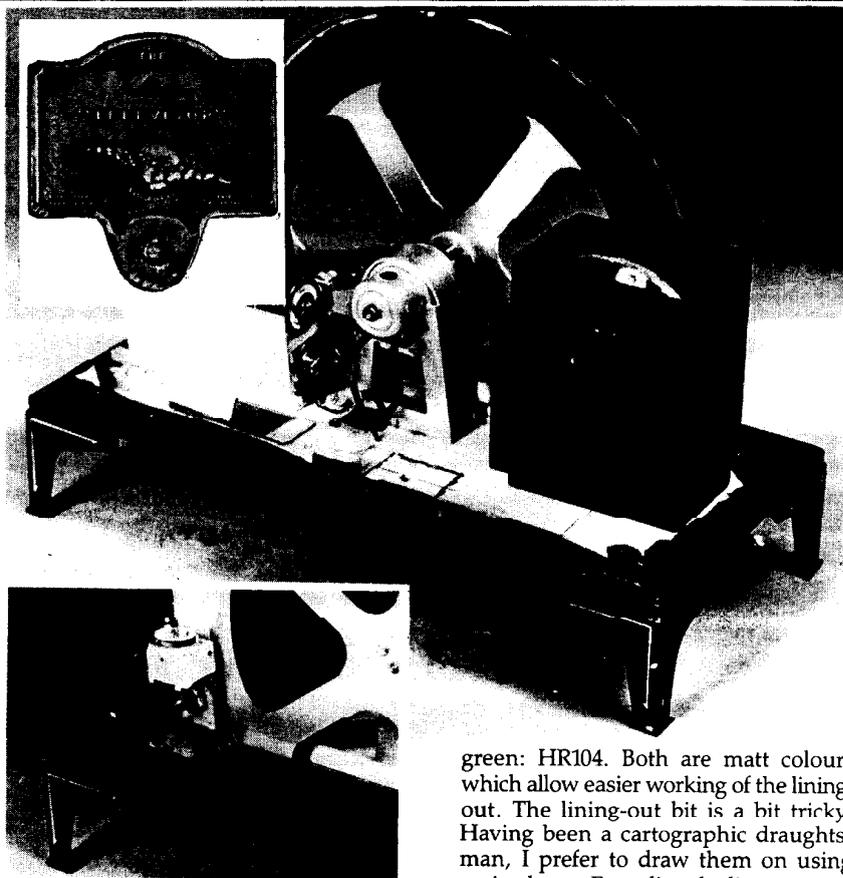
Construction

Cutting 60 thou polystyrene sheet can be a tough first: first make about half-a-dozen good strokes with the steel pricker-point against the straight edge. This opens up the line so that the cutting tool can do the rest more easily. Slice off the burr with the cutting tool. The curves, such as the sides of the disc housing, can be cut by pre-scoring the surface with the dividers from both sides of the plastic sheet. After this scoring part-way through, the plastic can be 'cracked' apart rather as in glass cutting. The 20 thou material cuts very easily.

Joining the plastic is a matter of practice. It's a bit like it was for a cine-projectionist in the old nitrate days: too little cement leads to a 'dry' joint but too much distorts the plastic. With this guide in mind joining is easy! Just place the two parts accurately together and apply the water-like cement to the join using the small paint brush. Almost as soon as the cement flows into the join the fixing takes place – in seconds! Avoid getting surplus cement on the smooth surfaces that show; it eats in immediately! If you do have this slight accident, leave well alone until the next day. By then the damaged area will be hard and can be safely smoothed with the flat surface of the cutting tool without the danger of increasing the damage.

The legs on the stand can be made with the 1mm plywood. Emulsion paint makes a useful primer before painting the final colour. Make a card stencil to ensure a consistent shape.

Making the scanning disc is something the BVWS could teach me, so suffice it to say that I used my favourite modelling trick for drilling the plastic. It employs a pin-vice and an ordinary dressmaking pin. The pin is cut with the pliers; the



burr is filed a little and then, after a few tests, it is used as a tiny drill set in the pin-vice. The position to be drilled is marked with the steel pricker to guide the tiny drill. Mounting the scanning disc on to the motor spindle is simple enough. A flange can be made up with, perhaps, a double thickness of 60 thou. A hole can be cut with a similarly made drill to the above. The rat-tail file will do the rest. The wood glue can be used to fix the disc to the motor spindle as there is very little weight involved.

Note that there is a raised 'moulding' decorating the front surface of the cabinet. For the sake of simplicity I've standardised the width of the various moulding pieces at 3mm in 20 thou sheet. The control knobs are fashioned from those on an old door-bell battery but they can be simulated with wood dowel or built up from 3 layers of 60 thou plastic. Leave overnight before final shaping of the knobs.

Painting and Finishing

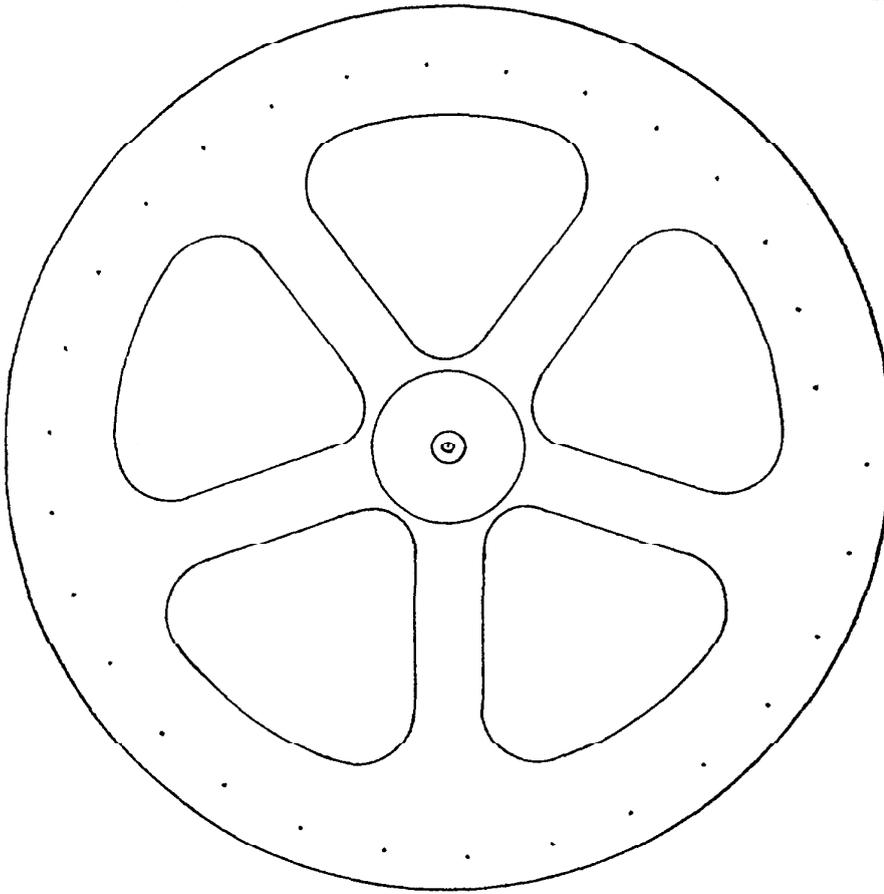
As I remember them, Televisor sets were in brown or green. Fussy folk will need no help in choosing their shade of colour but for the less particular two readily available paints are quite near to the original. For the brown, try Humbrol Authentic HR 102, GWR Brown. For the

green: HR104. Both are matt colours which allow easier working of the lining-out. The lining-out bit is a bit tricky! Having been a cartographic draughtsman, I prefer to draw them on using spring bows. For ruling the lines around the edge, extend the needle point to act as a gauge thus controlling the position of the line. For doing the rectangular 'frames' on the front, withdraw the needle point and use as a ruling pen against a ruler.

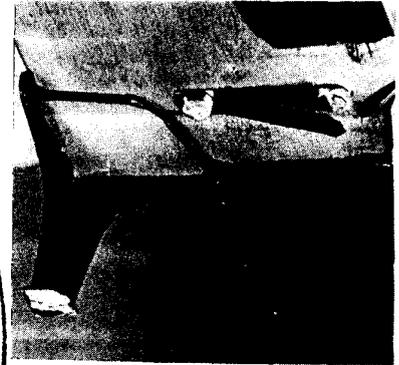
I find poster colour useful for the lining-out when mixed to just the right density but there are other paints such as acrylic (of which I am not very fond!) As I remember the lining-out was white. If surface tension on the brown on green paint causes the thin poster colour line to break-up as though on a greasy surface, try a bit of 'lick' rubbed firmly on with a clean cloth. (A widely used trick in the drawing office). Another method of lining-out, frequently used in model railways is the application of lines from a transfer sheet. PC Models, Birmingham, market these rather expensive 'Pressfix' sheets which can be obtained from Model Railway Ltd, 14 York Way, London, N1 9AA. 01-837 5551.

The electrical aspect of the motor and lamp is not a modelling matter and is, in any case very straightforward. With all else completed finish your model with a couple of coats of thinned, clear varnish. Humbrol sell this in small tins. Household varnish will do just as well.

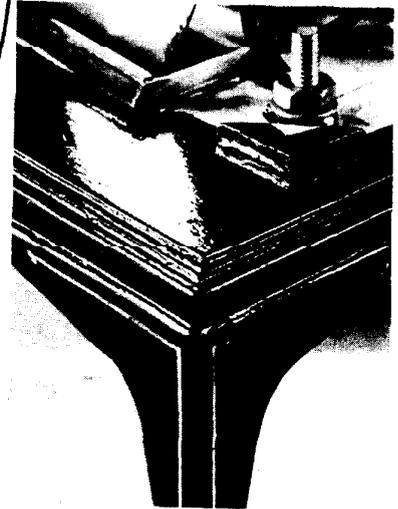
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Underside, showing switch and leg reinforcement using scrap parts from cutting of leg brackets.



Detail of "fluted" rim of baseboard.



Lining-out, using spring bows, the needle-point extended to act as a guide.

What they heard in 1922!

Although the British Broadcasting Company did not pull the big switch of the 2LO transmitter on top of Selfridges until November 1922, there was plenty to at least try and hear on the air-waves earlier that year - mainly from radio-amateurs, who were permitted to broadcast "request programmes" of gram records, and were in fact the original disc-jockeys.

The following was culled from the number two issue of "Popular Wireless", dated June 10th 1922.

"Broadcasting programmes"

The things you can hear every evening of the week on your set:

Although the regular broadcasting stations are not yet in operation, there is no need for the interested amateur to delay in purchasing a wireless receiver.

Apart from the weekly concert sent out by the Marconi Co. from their Writtle station, near Chelmsford, and the music and speech from the Hague on Sunday afternoons, there is a fairly regular supply of music and speech any evening of the week between the hours of eight and twelve.

Quite a number of amateur stations may be heard any evening working on

wavelengths of 180 and 1000 metres, and some of their gramophone items and piano solos are excellently transmitted.

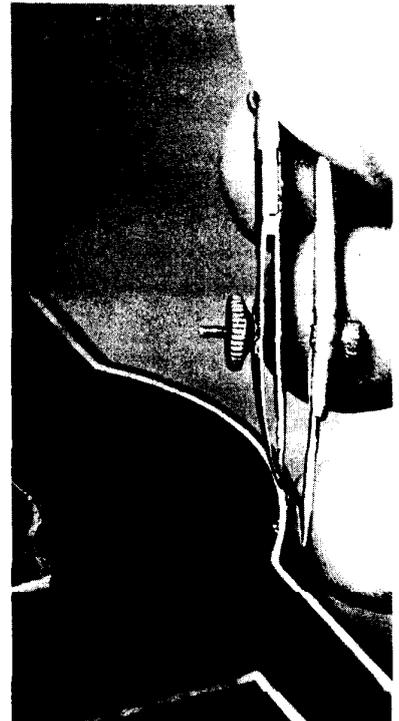
The great drawback at present is, of course, the fact that no specific timetable can be given for these impromptu amateur concerts; but amateurs listening in between eight and twelve on the wavelengths mentioned are sure to hear speech or music of some kind.

Saturday evenings, in particular, are favourites with the lucky ones who possess transmitting licences, and they usually do their best to entertain their less fortunate brethren who do not have transmitting sets.

Eiffel Tower Radio (call sign FL) usually transmits telephony on Sunday afternoon on a wavelength of 2,600 metres. The Hague Concert begins at 3 pm and ends at 5 pm. The station call sign is PCCG, and the wavelength 1,070 metres.

The Marconi station at Writtle (call sign 2 MT) broadcasts a concert every Tuesday evening on a wavelength of 400 metres, commencing at 8 pm BST."

From Douglas Byrne. IOW



VINTAGE WIRELESS MUSEUM



The Vintage Wireless Museum, headquarters address for the British Vintage Wireless Society is at 23 Rosendale Road, West Dulwich, London SE21 8DS. Telephone: (01) 670 3667. The Curator is Gerald Wells, whom visitors should telephone before visiting the museum.

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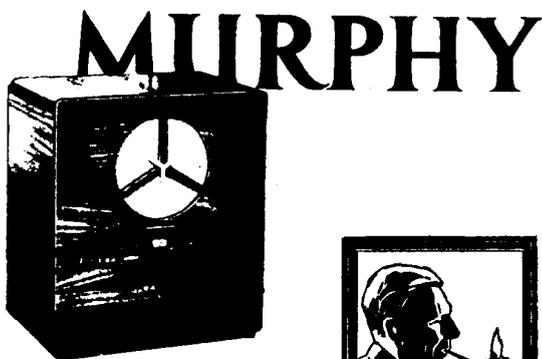
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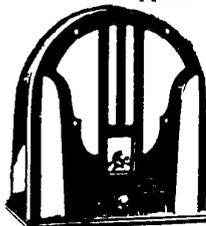
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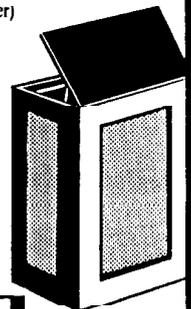
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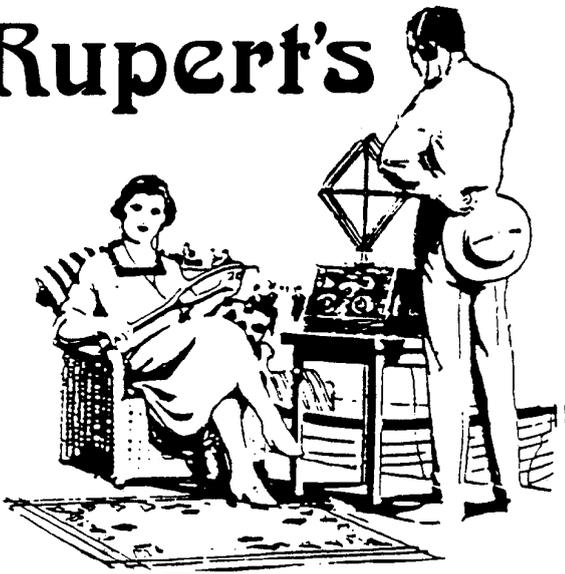


Prop. Stephen Ostler
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