



NEWSLETTER

No. 138

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PRECURSORS OF BROADCASTING PT. II

The first World War saw the development of wireless telephony and with it the technical requirements for effective broadcasting. What all this implied was not lost on David Sarnoff, a former office boy in the American Marconi Company who had risen to be Contracts Manager, and was to become President of the Radio Corporation of America. In 1916 he suggested that speech and music should be broadcast and a 'radio music box' be made for sale to the public. It must, he said, 'be arranged to receive on several wavelengths with the throw of a switch or the pressing of a button' and 'can be supplied with amplifying tubes and a loud speaking telephone, all of which can be neatly mounted in a box'.

So long as hostilities continued, little or nothing could be done, but with the coming of peace, interest was revived among both professional and amateur workers. Dr. Conrad of the Westinghouse Company used gramophone records during tests of a transmitter in 1919. An unexpected response from listening amateurs led to his giving two informal record recitals a week. Experimental transmissions of speech and music were made from a Marconi Company transmitter at Chelmsford in February and March 1920; these continued intermittently throughout that summer and included a now celebrated recital by Melba. Legal complications caused the cessation of these experiments at least for the moment.

Despite legal quibbles amateurs in various countries had from time to time transmitted records of music and song. In Holland in May 1920, concerts were broadcast from PCGG, the Hague, and, in Buenos Aires, Opera, concerts and recitals were to be heard from a transmitter at the Teatro Coliseo, whilst Conrad's Westinghouse experiments of 1919 had borne fruit in the establishment of the celebrated KDKA, Pittsburg Station.

During the Chelmsford work, concerts were broadcast to the S.S. Victorian, a transatlantic liner herself equipped for telephony. She, in turn, anticipating pirates of recent years, gave concerts of gramophone records which were listened to by other N. Atlantic shipping within a radius of about 800 miles.

By 1921, broadcasting was taking place in a number of countries, and voices, particularly those of the radio amateur, were raised against what was thought to be the restrictive policy of the G.P.O. in forbidding such transmissions in the United Kingdom. The Wireless World launched an appeal for funds to enable the 'Dutch Concerts' from PCGG to continue and early in 1922 regulations were relaxed sufficiently to allow a very limited programme 'for experimental purposes' to be transmitted by Marconi's from 2MT at Writtle, near Chelmsford, using a power of only 250 watts.

Meantime, elsewhere broadcasting stations were multiplying at an ever-increasing rate. By mid-1923 there were some six hundred in the U.S.A., the result of the profitable possibilities in broadcasting equipment manufacture dawning upon the business world.

The British Government, unwilling to allow a similar free-for-all situation to develop here, arranged for negotiations between commercial interests and the Post-Office; the result was the British Broadcasting Company, formed in the autumn of 1922. The first broadcast of the new company was made on 14 November of that year from 2LO, initially a 100w. transmitter at Marconi House, Strand. Next day transmissions began to be radiated from the Company's stations at Birmingham and Manchester; a few months later 2MT, Writtle, closed down and broadcasting was officially under way in the United Kingdom in sole care of the infant B.B.Co.

It is interesting to examine technical journals of the time. Advertisements, hitherto aimed at the professional and informed amateur were beginning to be slanted to include the public at large, where, it was hoped, a valuable market could be created. The 'First All-British Wireless Exhibition' was opened on 30 September 1922 at the Horticultural Hall and, as well as displaying laboratory-style apparatus, had cabinet and console receivers of various complexities and costs designed so as to merge more or less unobtrusively with the rest of the furniture.

In a strange way present-day styles are mirrored in some of this early domestic equipment. Kit sets were available and separate 'Unit Systems' of

tuners and amplifiers were on offer, some tastefully produced so as to be incorporated within the bookshelf. Prices covered a wide range anywhere between four and forty guineas, a great deal in modern monetary values, for those unable or unwilling to make a 'wireless set' for themselves.

From the manufacturers' point of view there was one very useful factor in home made receivers. A minimal ability sufficed to wire up a simple circuit and bore a few holes in an old cigar box; the expenditure of a few shillings was enough to introduce anyone, living within the limited range of the transmitters, to the joys of broadcasting. The crystal set basically was no more than a simple resonant circuit, a rectifier and a telephone earpiece. It was cheap, simple and effective - but not too much so, and could scarcely have been bettered as a leader to get the public hooked. In time, wonder was supplanted in the listener's mind by desire for improvement. Money would have to be spent on more complicated components or, for those exhausted by the engineering challenge of their first simple receiver, on the purchase of a commercial product.

To many now, the crystal set on its own, sans amplifier, represents radio receiver technology in the 'twenties. This was not so; by the beginning of that decade such a device had little purpose save as a stand by or the first step to be taken by the amateur enthusiast. Many amateurs were using the leaky grid detector with reaction, followed by a stage or two of L.F. amplification; reflex circuits using crystal and valve provided food for experiment, whilst, for the advanced worker and professional, the superheterodyne and superregenerative techniques were both gaining ground. In fact, even as the technically uninformed 'listener' was congratulating himself on his mastery over the powers of nature when he managed to find a 'good spot on the crystal', single sideband transmissions were taking place between New York and London.

Thus matters stood in 1922, the year that saw the death of Alexander Graham Bell, inventor nearly fifty years earlier of the 'articulating telephone'. Communication techniques had progressed at an astonishing rate during that half-century. Some there were who were not entirely happy with the turn of events; those, who only months before had played their part in easing G.P.O. controls on broadcasting, looked to the United States,

did not like all they saw, and, on the whole, welcomed the sober policies of a British Broadcasting Company whose pious hope it was that 'Nation should speak peace unto Nation'.

The coming decades were to reveal mankind's capabilities in that direction.

G. W. GARDINER

STAFF NEWS

Congratulations to:

Mr. A. F. Thomas now Photographer

Dr. P. C. Barber now H.S.O.

Welcome to:

Mrs. C. E. Winkless	S.O.
Dr. D. Andrews	H.S.O.
Miss G. S. Bush	C.O. (Winkfield)
Mrs. M. C. Clark	T/P Op.
Mrs. M. Bull	C.A. (ARU Culham)

Resignations

Mrs. V. D. Westbrook	Typist I
Mrs. S. Davies	Spec. T/P Op.
J. G. Wardrop	Vac. Worker
Mrs. P. J. Scammell	A.S.O.
D. J. Blakes	A.S.O.

Other Changes

K. L. Seal (S.O.) Returned to duty at RSRS (from Falkland Islands)
Working at U.C.L.

A. F. Smith (H.S.O.) Arrived Falkland Islands for 18 month tour

V. J. G. Brown (H.S.O.) Changed from Div. 4 to Div. 1

C. Medhurst (S.S.O.) Changed from Div. 3 Gp. 1 to Division 3 Winkfield

ESRO

J. M. Woodroffe (H.S.O.) left Falkland Islands (Returning to RSRS
March 1973)

SPORTS AND SOCIAL CLUB NEWS

Bonfire Night

This proved to be a superb pyrotechnic success in which a lot of fun was had by all, mainly because of the effort put in by so many. Neglecting the Committee, who always work like slaves anyway, I should like to thank:

Our First Aid and Fire Prevention Officers, Kathy Shand and Ivor Eyre (respectively).

The volunteers who fetched and carried the children from the local Homes. Norman Woodall and Bert Childs for providing a lot of extra facilities. Paul (who shall be nameless) and assistants for organising the fireworks and generally giving a grand imitation of Dad's Army.

Members of the football club for their help in putting up display supports.

And a mysterious person, rumoured to be in Typing, who somehow managed to direct a 3 ton BEA lorry containing scrap panniers to RSRS. It really was a good bonfire this year.

I hope I have not missed anyone.

Jeremy Allnutt

Household Goods Section

A good selection of Christmas books and Household goods are for sale from 12.30 - 1.30 p.m. Thursdays and Fridays at the kiosk (near the workshop).

Ellen Scammell

Table Tennis

The two teams we have entered in the Slough and district table tennis league this season have, so far, shown somewhat mixed fortunes. The first team have played four matches and gained 5 points, having won 2 and drawn one.

John Dudeney has played a first round Lynford Bowl Handicap match and did well to beat Mike Minnion of I.C.I. 'A', increasing his four point lead on handicap and winning the 5 game match 3-0.

The second team have played four matches but have not yet won any, although their results show a definite upward trend which, if it continues, should see them winning the next match. The second team have also played a Dilger Cup team handicap match against a young team from Eton Wick. This resulted in a 6-3 win despite a three point deficit on handicap.

League Results not already reported

RSRS 'A'	5	McMichael Lions	5
RSRS 'A'	7	Burnham F.C.	3
McMichael Terriers	7	RSRS 'A'	3
RSRS 'B'	3	Iver Bulls	7
RSRS 'B'	4	F.M.D.	6
RSRS 'B'	4	Eton Nalgo Hornets	6

Dalger cup result

RSRS 'B'	6	Eton Wick Furies	3
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A. Buck

Motor Club

The recent mild frosts brought a rush of customers for anti-freeze, to the extent that the last drop of 40 gallons has been sold. The last purchase of CSMA oil has also mostly been sold and new stock will be ordered very soon. Anyone with specific requirements should contact the Hon. Sec. The Motor Club Committee is now considering the purchase of more tools or equipment to assist members and suggestions would be welcome. If possible suggestions should be of items which members know will work satisfactorily. However, before embarking on new purchases the Committee would like to know the whereabouts of the Trolley Jack. If any member has any knowledge of this please advise the Hon. Sec.

A. Muzlish

Wine Circle

The wine circle is arranging a series of lunch-time lectures during the coming months on the basic principles of wine and beer-making.

The first in the series will be held on Tuesday 12 December at 1 p.m. in the Cricket Pavilion when Keith Burrows will talk on making wine from concentrates.

These lectures are open to non-members of the wine circle as well as members. We are sure everyone will find these interesting and hope that as many people as possible will attend, even if you don't intend making wine come along and see how it is done.

The R.S.R.S. Wine Circle invites all members of staff to a Cheese and Wine Party on Wednesday 20th December 1972 from 12.45 in the Bar. Tickets, 15p to cover the cost of food supplied, are on sale from members of the Wine Circle Committee.

A great variety of home-brewed wine will be available for guests to enjoy.

PAT SCAMMELL (Nee Dadds)

Soon after arriving at RSRS I realised that it was Pat Dadds who really ran the Station! Pat was a member of the Station's staff for only five years but during that time she had a great influence on the sporting and social life of the Station. Pat was Secretary of the Sports and Social Club for 4 years, a position which involves a tremendous amount of hard work and requires considerable diplomatic and organising skills. Pat also ran the Household Goods service of the Club and expanded the stock to the wide variety of the goods available today - she was the backbone of the Club. On the 13th of October we bid a sad farewell to Pat when she left to join the concrete world. On behalf of all members of the Sports and Social Club I am taking this opportunity to say how very much all Pat's drive, determination and effort was appreciated by the Club.

R. Walls.

LETTER TO THE OUTSTATIONS

Dear Colleagues

From time to time I chronicle details of the changing face of Ditton Park. Reports of the movement of masts, uncovering of dishes (parabolic and such) and experimental apparitions all help to swell the ceaseless flow of information brought to your notice by your newsletter. This month's contribution to that stream is Hut 11, or rather the news that it is now no more.

An old construction, it occupies a niche in the affections of many folk for many reasons. Internal electrical screening proclaimed it a one time ionosonde hut (Not the ionosonde hut I hasten to add. That, Hut 18 in former years, moved and is alive and well, living under the assumed name of hut 4.) No, hut eleven's chief claim to fame in the evening of its years was an aesthetic one. Time, weather and nesting birds wrought a not unpleasing change. The master stroke was achieved by the rickety chimney stack which gave to the whole edifice the look of something glimpsed in the more underprivileged regions of the Ozarks.

Its pathway and precincts could be seen to have long been the rendezvous of cattle. The scene lacked but one thing; the patriarch, ragged of trouser and hat, corncob pipe 'twixt lantern jaw, sunning himself on the step and offering monosyllabic gems of rustic wisdom, punctuated by expectorations of an amazing range and accuracy.

Unfortunately the State of the Nation reflected in the Station's complement does not, at present, allow recruitment in the Philosopher (homespun, spitting, category II) grade. It was therefore deemed best that the old shack should be pulled down before it fell down. No sooner ordered than achieved. With all the skill of Captain Boycott dispossessing a luckless peasant family, engines were applied to the roof and walls, cables pulled taut and lo! the house was rent asunder and great was the fall of it.

All this was on or about the beginning of November. As usual we had a splendid bonfire to mark Guy Fawkes' day. Verb. Sap. seems to be a suitable comment from,

Yours sincerely

The Editor

List of Reprints - November 1972

A. J. Gibson

Flashlamp-pumped dye lasers for investigations
of the upper atmosphere.

Journal of Physics E. Science Inst 1972

Pages 971-973.

H. Rishbeth, P. Bauer

W. B. Hanson

Molecular Ions in the F.2 Layer

Planet Space Sci 1972. Vol 20. 1287-1297

L. Thomas

M. R. Bowman

The diurnal variations of hydrogen and
oxygen constituents in the mesosphere and
lower thermosphere

JATP. 1972. Vol. 34 1843-1858.

INTERNAL MEMORANDA

NIL