

BOOK REVIEW

EARLY WIRELESS. Anthony Constable, MIDAS BOOKS, 1980, pp 160.

An indication of the growing interest in 'Vintage Radio' is provided by the appearance of another book, actually the third British one, on the subject. Although the title *Early Wireless* could mislead some people, particularly Americans, into believing that the book is concerned with the pre-broadcasting era, such is certainly not the case. Because the word 'wireless' remained in common use in the U.K. for a much longer period than it did in other English-speaking countries, it is therefore not inappropriate to find it being used on this occasion.

Early Wireless is subtitled on the cover 'A Collectors' Guide' and this fairly sums it up; furthermore the book appears as one in a series of the Midas Collectors' Library. The author, Tony Constable, is a leading light in the British Vintage Wireless Society, and his name will be familiar to New Zealand members as the editor of the *B.V.W.S. Bulletin*.

The book is divided into three parts:

1. Electromagnetic Ripples: From the earliest times to c. 1900.
2. From Coherer to Valves: From 1897 to the First World War.
3. Wireless 'Goes Public': From W.W.1 to the 1930's.

Early inventions and circuitry are

effectively illustrated by means of homely little sketches. Later items of equipment, dating from W.W.1 to the 1930's, are illustrated by photographs. An appendix, compiled from the 1926 *Wireless World Buyers' Guide* lists the entire range of British-made receivers available during that year.

It is pleasing to note that errors in the text are minimal, but it is less pleasing to find that one occurs as a result of its being copied verbatim from an erroneous source — a 1977 American publication.

Included in the closing pages of Section 3 are some personal comments by the author on the subject of restoration work. Here he has some very scathing remarks to make concerning those collectors who like to restore their old radios to 'showroom' condition. There will be many who do not see eye-to-eye with the author on this matter. After all, what would the vintage car game be without all the spit and polish?

Early Wireless is recommended as a good book for the beginner, though it will be sure to find a place on the bookshelves of many experienced and more knowledgeable people as well.

— J.W.S.

SPECIAL NOTE: Copies of the above book are available to N.Z.V.R.S. members at a reduced rate. The first shipment is now on its way, and is nearly sold out. Those people requiring copies, and who have not yet placed a firm order, are advised not to delay ordering. The N.Z. price is expected to be \$14.50 plus local postage where applicable. Enquiries should be addressed to the BULLETIN editor.

Dubilier

CONDENSER AND RADIO CORPORATION

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BULLETIN

NEW ZEALAND
VINTAGE RADIO SOCIETY

An organisation devoted to the preservation and restoration of early radio equipment, and collation of associated information



THE NEW SCOTT Philharmonic

NEW ZEALAND VINTAGE RADIO SOCIETY

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N.Z.V.R.S. BULLETIN . . .

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Contributions to the BULLETIN, and advertisements, should be sent to The Editor.

Regular meetings of the N.Z.V.R.S. are held on the THIRD Monday of each month except December. Out of town members are cordially invited to attend meetings when in Auckland. Venue: Supper Room, Dominion Rd. Methodist Church, 426 Dominion Rd. Time 7.30 p.m.

EDITORIAL COMMENT

This, the fifth issue of N.Z.V.R.S. BULLETIN, marks the start of our second year of publication. Early days yet, but a beginning has been made.

Unfortunately, due to rising cost incurred in printing and distributing the BULLETIN, it has become necessary to increase the annual membership fee for the coming year. Regrettable though this increase is, it is quite unavoidable if publication of the BULLETIN is to be continued.

Because the majority of members (about 60% at time of writing) lives outside the Auckland metropolitan area, and consequently cannot attend meetings, it should be obvious that some form of regular bulletin is a necessity. Apart from its function as a repository for all sorts of historical information, a bulletin is really the only way of keeping out-of-town members informed about what's going on.

As with the Society in general, the success of our BULLETIN will depend upon receiving continuing support from both old and new members, and therefore no apology is made for again making an appeal for further contributions for publication. So, even if you have never tried your hand at writing before, now is the time to 'have a go'.

— J.W.S.

A VISIT TO SOME EUROPEAN MUSEUMS

by Arthur Williams

GERMANY. A visit was paid to the *Deutsches Rundfunk Museum*, located under the *Funkturm* (Radio Tower) in West Berlin. They have a large display of broadcast receivers dating from the 1920s through to the 1950s. Also featured are mock-ups of a 1930s radio shop, a living room of the 1920s and one of the 1950s, as well as a wartime air-raid shelter, all equipped with receivers of their respective periods. Effective use is made of panoramas showing worldwide radio broadcasting and television networks. On sale are postcards and posters featuring the Museum.

FRANCE. In Paris, Radio France's studios are located in a large circular building not far from the Eiffel Tower. A conducted tour of the studios takes you through their *Musée de la Radio* where an interesting display depicting the development of radio and television, and the parts played by various pioneers, can be seen. Unfortunately for those who cannot speak the language, the commentary is only in French, as are the labels on the exhibits.

ITALY. The Leonardo da Vinci museum (*Museo della Scienza e della Tecnica*) in Milan has a section devoted to radio. Exhibits include equipment from Marconi's yacht *Elettra* and a large broadcasting transmitter of 1932 vintage.

GT. BRITAIN. Here the famed Science Museum in London is a 'must see', but nowadays there are many local museums throughout the country which have displays of early radio equipment. While in England I visited the historic spot in Poldhu, Cornwall, where once stood the famous Marconi transmitting station used for the first trans-Atlantic tests in 1901. A monument with a plaque marks the site of the station. Some remains of the foundations of the buildings can still be seen, and a stone house shown in early views is still standing.

SCOTT AND HIS RADIOS

by John Stokes

(Part 1)

Ernest H. Scott was born and educated in Dunedin, being one of the family which founded the firm of Scott Bros. Engineering Co., makers of washing machines. E.H. Scott served in France during the first world war, and afterwards went to Australia for a few years, before deciding to try his luck in America. There he established the Scott Transformer Co. of Chicago, in 1924. This firm originally specialised in the manufacture of high quality RF and IF coils, which is what the word 'transformers' in the company name refers to. Years later, when referring to those early days, Scott mentions having a staff of two employees at the time.

Apparently Scott had in mind to enter the field of receiver manufacturing by producing small numbers of high performance sets, which would be superior to the run-of-the-mill commercial receivers of the day. Scott was obviously quick to recognise the potentialities of the superheterodyne, for this was the type of set he decided to develop. In so doing, he was somewhat of a pioneer, even though there were other 'independents' similarly engaged. During 1925-26, superhet kits were being offered under such names as Fenway, Lacault, Madison-Moore, Magnaformer, and Remler. Note that all of these were kits, for thereby hangs a tale!

Scott's immediate need was to develop a prototype receiver, and this he then proceeded to do. Judging from its appearance and description, this set owed something to RCA's first Radiola superheterodyne, an 8-tube portable using 199's in all stages, which was marketed in 1924. Scott was an astute enough businessman to realise that in order to succeed in the highly competitive American market he would have to do more than make a good receiver, or even an outstanding one—he would have to offer some feature no one else could, and publicise that feature accordingly.

So it was that Scott decided to use his



E. H. SCOTT

prototype set to establish as many DX records as possible, knowing that long-distance reception would be a big selling point in any receiver's favour, in those days. So . . . in order to make the distance as long as possible, Scott hit on the idea of taking his set to some remote spot on the earth's surface, where he would be a long way from the United States. What better place than New Zealand? By doing this he could have a holiday at the same time, and combine business with pleasure.

Early in 1925, Mr. and Mrs. Scott returned to New Zealand where they stayed for several weeks with his wife's parents in Tasman, near Nelson. In this location, Scott was successful in securing some pretty impressive long distance reception, using his portable superhet on its inbuilt loop aerial. For example he received at loudspeaker strength verified reception of the American station WCBF located in Zion City, Illinois, a distance of over 8000 miles. Altogether, 25 different American stations were received during the time spent in Tasman. The world records established by E.H. Scott were:

1. The greatest number of American stations heard over distances exceeding 6000 miles.
2. The most consistent reception of distant broadcasting stations.
3. The longest distance that any broadcast station had ever been received using only a loop aerial.

Having satisfied himself with the capabilities of his receiver, Scott decided that the time was now ripe to commercialise it. But before leaving New Zealand he let it be known that, because of the success he had obtained in Tasman, he would use the name of the town as a brand-name for his receivers — but, as we know, this did not happen. In May 1925 the Scotts returned to America.

It should be realised that, in attempting to develop a commercial version of his receiver, Scott had to face more than technical and manufacturing difficulties — at that time RCA had Armstrong's superheterodyne patent under lock and key, and were not issuing manufacturing licences. There was only one way in which an independent manufacturer could produce a superhet; and that was to market it in kitset form. By doing so, Scott and other independents could claim to be merely making and selling parts, which anyone was free to do, and thus avoid legal action for patent infringement. But would superhets prove too complicated for home constructors to assemble and get going properly?

Even with the IF section supplied as a pre-wired and tested unit, the number of people willing to tackle the assembly of a superhet must have been quite small although we have to remember that Scott was not aiming for a mass market. Apparently not as many home constructors as hoped for eventuated, and to improve matters Scott appointed a network of agents throughout the U.S. who were capable of assembling (or 'custom building' as it was now called) Scott radios to order. By 1929 there were over 7000 of these agents.

It was previously mentioned that Scott commenced business by making RF

Kitset only and IF coils, and these were the only Scott-made parts used in the first sets. These components carried the brand-name 'Selectone'. In 1926 the first Scott, known as the 'World's Record Super Nine', was marketed. It used two RF, two IF, and two AF stages.

In 1927 an extra IF stage was added, resulting in a model called the 'World's Record Super Ten'. This model was notable for the use of a UX-210 power tube in the output stage, and was of course intended for use with a 'B' Eliminator. For the next four years the words 'World's Record' were to be applied to each new model produced.

The year 1928, was marked by the introduction of the first screen-grid model — the 'Scott Shield Grid World's Record Super 9'. It had three IF stages using UX-222 tubes, but retained triodes in the RF stages. Due to the greatly increased overall gain, it was found possible to dispense with the first audio stage, and couple the output from the detector directly to the output tube. An AC version of this model was released in February 1929, using the same tube line-up now fed by 'A' and 'B' eliminators. Because battery tubes were still used, the filament voltmeter on the front panel was retained in the AC model. The former UX-112A output tube now functioned as a driver for the UX-250 output tube, which was incorporated in the power pack. This unit, incidentally, was made by Thordarson.

The next Scott, known as the 'World's Record AC Nine', appeared in May 1929 and was the first single-dial-control model. It used indirectly-heated AC tubes and was the first true all-electric Scott. Presumably because AC screen-grid tubes were then not yet available, this set used triodes in all stages. A screen-grid version using CeCo AC-22 tubes followed in November of the same year. Also in 1929 an economy model known as the 'Scott Symphony' was marketed, and it remained the only TRF receiver Scott ever produced.

(To be continued)



The NEW ZEALAND VINTAGE RADIO SOCIETY'S
Exhibition of old-time radios and associated equipment will be held during
Queen's Birthday weekend, as under . . .

Saturday May 30th. 1981	Noon to 5 p.m.
Sunday May 31st.	Noon to 5 p.m.
Monday June 1st.	10 a.m. to 5 p.m.

ADMISSION: Adults \$1.00 Children 50¢ NZVRS Members free

This will be the largest exhibition of its kind ever held in the Southern Hemisphere. Over 200 early radios and associated apparatus will be on display. **DON'T MISS IT!!**

LOCATION . . .

DOMINION ROAD METHODIST CHURCH HALL
426 Dominion Rd · Auckland ·

(This church is located on the east side of Dominion Rd., between Milton Rd. and Herbert Rd. — about half-way between Valley Rd. traffic lights and the Balmoral Rd. traffic lights.)

SERVICING INSTRUMENTS OF THE 1930's

by Alex Jefferys

This contributor's earliest recollection of radio test instruments during the early 1930s was that of a 'Supreme' Analyser, known as a 'Diagnometer'. This was a volts and milliamps measuring device consisting of three separate meters with associated switching and sockets — the whole contained in an oak case measuring approximately 16 x 5½ inches, and 6 inches deep.

The diagnostic procedure was to remove a (likely) valve from a suspected faulty stage in the receiver, place the removed valve in one of a number of sockets provided on the instrument panel and then plug the instrument's wandering lead into the vacant socket of the receiver under test. With appropriate switching, the plate, screen, and cathode voltages could then be read off—as well as plate and screen currents, while on a third meter any required AC volts could be

measured. All meters were 'Weston'; the AC movement was a high quality moving-iron type with a sensitivity of something like 150 ohms-per-volt, while the DC volt-meter had a sensitivity of 1000 ohms-per-volt.

Several adaptors were supplied with the wandering lead to enable its use in a variety of different valve sockets. From memory, it is thought that the main plug was a 7-pin type ordinarily associated with a 2A7 valve. Valve bases in common use at the time were: 4-pin (45,80), 5-pin (27, 47), 6-pin (58, 2A5), and 7-pin (2A7, 2B7). All three meters were available for individual use with test prods, in addition to their use in the analyser.

As time went on, the present scribe's interest in the diagnostic attributes of taking measurements while all was 'in situ' started to wane. Somehow it always seemed that, while it was nice to have all those readings that showed up so readily once the operations had been performed, it usually resulted in the chassis having to be removed anyway, in order to effect

the necessary repairs. Whether it was a faulty coupling or bypass condenser—or one of those tall thin cans known as wet electrolytics. Thus it soon became the norm to measure voltages etc. after the chassis had been removed, using the individual meters with test leads attached. This procedure has remained largely unchanged to the present day.

Provision was also made on the analyser to test valves. This was achieved by determining a particular valve's capability as an oscillator when it was placed in an oscillatory circuit incorporated in the instrument. An externally mounted 'spider-web' coil was first plugged in (see illus.), filament voltage was set, and a change in plate current readings determined the 'goodness' or otherwise of the valve. A supplied chart gave the expected readings for a good valve.

This same oscillatory circuit arrangement enabled the instrument to be used as a test oscillator for receiver alignment purposes, but as AC was used on the plate the modulated note left something to be desired. Certainly there were better and more sophisticated means available.

Lacking a low-reading ohm-meter, the present writer converted the output meter (separate accessory) associated with the analyser for use as just such a meter. It was truly invaluable for determining the worth of IF transformers (broken strands of Litz wire), voice coils, and any other low-resistance windings.



SUPREME DIAGNOMETER.
230 Volt A.C.



SUPREME SET ANALYSER.

Market place



Members' classified advertisements are inserted free of charge, subject to availability of space — no assurance of insertion in a particular issue can be given. Short ads. will be given preference when space is short. Address to The Editor.

WANTED

PARTS for Bremmer-Tully Counterphase 8; dial scale, rheostat, knobs, audio transformers and terminals. Cabinet for Grabe Synchrophase. Cabinet for Philco 70 cathedral. Arthur Williams 26 Centre St., Invercargill.

THREE VALVES wanted to complete my King Neutrodyne. Dave McClaren, 25 Aotea St. Dunedin.

PARTS for Philips 634A; tone switch, on/off switch, Tuning capacitor, 4th. RF coil, output transformer, two knobs, E444N valve, back cover for cabinet, and circuit diagram. Ediswan-Mazda valves U403, SP181, TH133; Mullard Pen4DD or ABL1. Ross Paton, 56 Glengarry Rd., Glen Eden, Auckland.

HORN SPEAKER of any sort, to complete my battery set. Can anyone help? Hugh Muggeridge, Little Oeo Road, Manala, RD28, Taranaki.

ANY NON-AMERICAN battery valves or tubes of 1930 or earlier vintage. Will buy for cash. Richard Evans Jnr., Apt. 104, 5112 Sepulveda Blvd., Sherman Oaks, Calif. 91403, U.S.A.

FOR SALE OR TRADE

PHILCO MODEL 20 chassis. Reproduction catalogues: Stewart Warner 1926, 16pp. Hartle & Gray (Auckland) c. 1926, 10pp. \$2.00 each post free. Arthur Williams, 26 Centre St., Invercargill.

METAL CABINET for Crosley 'Jewel Box'. Ross Paton, 56 Glengarry Rd., Glen Eden, Akd.

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Mr Bill Farmer, aged 70, of One Tree Hill, a keen collector and restorer of old radios, listening to a 1920s record at the Vintage Radio Society's exhibition at the Methodist Church Hall in Dominion Rd. Mr Farmer is seen with an Atwater Kent Cathedral radio (left), built in 1931, a broadcast microphone and a Columbia phonograph, built in 1915.