Marketplace

Advertisements for the next issue must reach the Editor by 21st July 1991. Ads should be either hand printed or typed on a separate page. Note: no verbal or phone ads will be accepted. Remember to include your name, address and phone number. There is no charge for ads but the NZVRS is not responsible for transactions between members. Address ads to:
The Editor NZVRS Bulletin, 281C Hillsborough Road Mt. Roskill Auckland 4.

AVAILABLE

Bakelite case and chassis (dial glass broken) of Ferranti model 145, see figure 643 in Jonathan Hill,s "Radio, Radio". Offers please.
G. Watson 28 Pulham Cres. Hamilton Ph. 553812

Wells Gardner 7L mantel cabinet c/w all cabinet fittings including dial and magic eye escutcheons (see p102 Golden Age).
D.J.Smith 156 Rangitoto Road Papatoetoe Auckland.

Sanwa test oscillator model SO-115, Precision series E200 signal generator. Trade or swap. J.A.Thompson 32 Trent St. Oamaru Ph.03-4345727.

Original advertisements and circuits for Australian radios. Quote all valve types, type of dial, type of cabinet (e.g. mantel or console) or better still supply a photograph (which will be returned). Up to twelve sets for NZ $5, NZ currency acceptable. Anyone visiting Australia is welcome to call and see me but please give prior notice.
Darryl Kasch P.O. box 660 Maryborough Queensland 4650 Australia.

WANTED

Filter box FL/8 for ARC5 receiver, volume control box BC335 for ARC5, ARC5 MC211 angle drive gearboxes for receiver tuning cables, BC337 interphone radio switch box.D.J.Smith 156 Rangitoto Rd. Papatoetoe Auckland.

Prop pitch motor, any condition, or parts. FL8 wartime "Beam Filter". Audio filter for c.w. ex Marconi receiver or similar. Marconi 365B morse key.
Barry Kirkwood 147 John St. Ponsomby Auckland. Ph.09-766687.
Expatriate Kiwi, now resident in Australia seeks a 1939 Columbus or Courtenay model 65 radio, has 6 valves plus tuning eye, 5 knobs, 6 push buttons. Please write to; Stephen Berry PO box 763 North Sydney NSW 2060

RAF aircraft transmitter type T1083 wanted by British ham G3KPO. Please contact John Stokes 281C Hillsborough Road Auckland 4 Ph. 09-656615.

Dial glass and two fixing clips for same, for Columbus 36. Rear cabinet moulding and battery cover for Russian made multiband portable radio. Type VEF204. Two speed planetary dial drive assembly for Pilot 393B. Record/P.b. head for Sony 521 stereo open reel tape recorder (early 1960's uses valves).
Ross Paton 56 Glengarry Rd. Glen Eden Auckland 7 Ph.09-8188463.

P.O. 3000 relays 1Kohm coil resistance. Urgent. Phone 2767573 (collect)
Mike Edwards 6 Melody Lane Otahuhu Auckland.

Circuit diagram for ERLA "Monodic" S5 or C12 battery set.
B.W.Smith 24 Caley St Foxton Ph.069-37774 (collect).

Australian Official Radio Service Manuals Volume 15 (1956 receivers). Volume 16 (1957 receivers) or photocopies of indexes of same. Any Gernsback Official Radio Service Manuals or photocopies of indexes. Any Rider Manuals. Any Radio and Television Service Manuals published yearly by MacDonald and Jane's London, or any other Radio Service Manuals considered.
E.Hakanson 17 Williamson Ave Grey Lynn Auckland 2 Ph.09-766059 after 6pm.

Two chassis and suitable speakers for Phico model 89. (I have the cabinets)
Gordon Baker 110 Wood St Palmerston North Ph.06-3563390 home 06-3568546 bus.
New numbers as from 25th May 1991.

file copy

N.Z.V.R.S BULLETIN Vol.12 No.1 May 1991
NEW ZEALAND VINTAGE RADIO SOCIETY

A'sian R's

NEW ZEALAND VINTAGE RADIO SOCIETY

A non-profit organisation devoted to the preservation of early radio equipment and associated historical information

PRESIDENT: *Don Strange*
10 Pendlebury St
Titirangi Auckland 6
Phone (09) 817-8611

SECRETARY: *David Millett*
41A Eversleigh St
Takapuna Auckland 9
Phone (09) 497-420

TREASURER: *Bryan Marsh*
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Mangere Bridge Auck.
Phone (09) 667-712

THE NZVRS BULLETIN is published quarterly in the months of February, May, August and November.

Contributions from members are always welcome and should be sent to the Editor.

Opinions expressed by correspondents are not necessarily those of the Society.

BULLETIN EDITOR: John Stokes
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Mt. Roskill Auckland 4

ASSISTANT: Ian Sangster
75 Anawhata Road
R.D. Piha Auckland

Time?

MEETINGS

Regular Auckland meetings of the NZVRS are held on the third Monday of each month as follows:

1990, Nov.19, Dec.17

1991, Jan.21, Feb.18, Mar.18, Apr.15, May 20, June 17, July 15 Aug.19 Sept.16, Oct.21, Nov.18, Dec.16

AUCTION SALES of vintage articles are held quarterly in the months of March, June, September and December.

VENUE: Meeting Room of the Dominion Rd Methodist Church (at rear of church) 426 Dominion Road, Mt Eden.

WELLINGTON AREA MEETINGS

Monthly meetings are held in the Tirete Hall, Te Pene Ave Titahi Bay at 1 PM on the first Sunday of every month. For further details contact Neville Grubner 27 View Rd Titahi Bay Phone 336-661.

Membership lists are available from Bryan Marsh 20 Rimu Road Mangere Bridge Auckland Phone (09) 667-712 at a cost of $1.50 post paid.

Classified advertisements are accepted from financial members only. See back cover for further details and please observe the conditions as set out.

NEW MEMBERS

Jenner R.P.	Matamata
~~Courtenay A.J.~~	~~Matamata~~ Courtney Australia
Cleland B.K.	Auckland
Berry S.J.	Australia
Rieper M.J.	Australia
Meredith J.T.	U.S.A.
Black D.M.	Featherston
Eade H.D.	Auckland
Taranaki Aviation, Transport and Technology Museum, New Plymouth	

FROM YOUR TREASURER

Copies of Financial Statement for the year ending 31 March 1991 are now available on application accompanied by an SAE. Excess of income over expenditure for the year was $2202.34. Bryan Marsh thanks all the 201 members who renewed their subs promptly and hopes to receive further renewals as a result of this reminder.

From the Editor

As many of those who attended the large auction sale of vintage radios and other items from the Harry Byrne estate held recently in Auckland will know, this sale attracted buyers from as far away as Australia. This a new, and probably inevitable development as interest in vintage radio, which got off to a slow start in Oz, is now booming in that country.

The Australian buyers secured some very choice items, apparently in this case purchased on a price no object basis. Naturally, there were a few mutterings to be heard about how Aussies had pushed up prices way above what some Kiwis were prepared to pay, but actually the Australian purchases amounted to only a very small proportion of the total. From now on we will just have to get used to the idea that even auctions of old radios may attract buyers from other countries. After all we cannot expect vintage radios to be exempt from 'market forces' any more than other commodities are.

It is even conceivable that any future large auctions may attract buyers fron even further afield than Australia. But even if there were no overseas buyers, prices would still be rising; gone are the days when an old radio could be picked up for a song!

Another, and more serious, objection to to presence of overseas buyers is that items having a particular historic significance may be taken out of the country. If such a thing were to happen it would certainly be unfortunate because there are so few really early New Zealand made receivers left that we can ill afford to lose any.

Of course, the same sort of thing has been going on for years in other countries, either directly or through the medium of auction sales. Because radios of any sort are not yet old enough to qualify as true antiques, there has been no restriction placed on their movement between countries.

J.W.S.

see letter from George Newlands in the following issue 12-2-3

THE PHILIPS 2510

By PETER LANKSHEAR and JOHN W. STOKES

This article represents many hours of work on the part of the authors who have attempted to compile a definitive account of the development of a receiver on which nothing has hitherto been published. The authors believe the amount of work entailed in its preparation to have been justified if for no other reason than to provide the many N.Z. owners of 2510s with as much information as possible on a unique receiver.

The 2510 has proved to be very much of a survivor, the number to be found in the hands of N.Z. collectors, many of whom have two or more, proves the point. Even though some of the remaining sets may be mute for the lack of valves or as a result of cannibalisation, remarkably few seem to have been scrapped altogether. Surely no other receiver of its class made anywhere in the world can equal the 2510 in the longevity of original components; after sixty years working examples of this Dutch built receiver exist in which no parts other than valves have ever been replaced! No, they certainly don't make 'em like that anymore.

* * * *

One of the first Philips receivers to be seen in this part of the world, the type 2510, should be of interest to Antipodean collectors for two reasons: it was one of only two imported models to be sold in both Australia and New Zealand, and it was Philips' first export model. At the time of its production in 1930 it was unique amongst European made receivers in having single-band, medium-wave (BC) coverage only. Furthermore, it was a 'one off' model as Philips did not produce any more special export sets until several years later, apparently for lack of suitable export markets at the time.

The production of a special export model at the early date of 1930 raises the question of just where did Philips expect to find a market sufficiently large to justify the development of such a set in the days when export models were largely unknown, at least among European manufacturers. And bear in mind that the 2510 was more than just an existing model modified by omitting the long-wave band, it was specially developed for the purpose. Its nearest relative was the 2511, a model not seen in this part of the world.

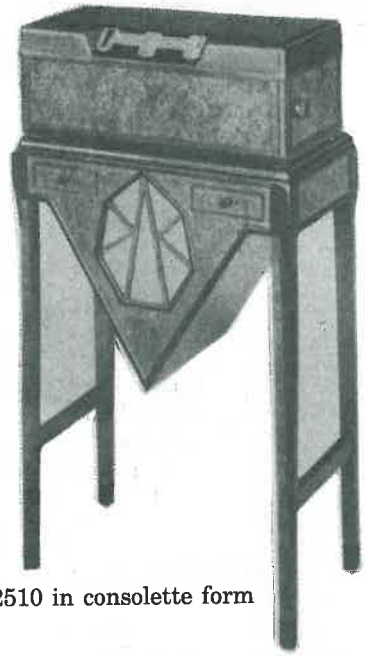
Because most countries where radio manufacturing was taking place at this time had protected their home markets in in one way or another, the only way that Philips, or any other firm, could enter those markets was by establishing a factory within a targeted country. A case in point was Great Britain where Philips had set up a radio factory in 1929.

The fact that export markets were not easy to find was probably the reason why Philips had to look as far afield as Australia and New Zealand, two countries where although broadcasting was comparitively well established, radio manufacturing was in its infancy and most receivers were being imported. In both these countries Philips products such as battery eliminators, speakers and valves were already well known, which made it a logical move to include complete radios now that the firm had become established in this field. With the production of the 2510 they were all set to go.

Unfortunately for Philips, the arrival of the 2510 in Australia more or less coincided with the introduction of import restrictions in that country with result that their receivers never had a chance to become established on the Australian market. That left only the much smaller N.Z. market, already well supplied with American receivers, but at least there were no import restrictions to contend with in those days.

The rare 'Concert Grand' moving-iron speaker.

Type 2611 moving-coil speaker 1929



Type 2510 in consolette form

Type 2510 in console cabinet 1930

With the hoped for Australian market effectively closed there was consequently little incentive to develop any further single-band models and for the next few years New Zealand's requirements were met by supplying standard European models, which from 1930 on could be supplied from the newly established British factory. This move enabled Philips to take advantage of the preferential tariff rate applicable to British made goods by reducing landed costs.

Another question now arises: could the 2510 have been sold in any other countries? The answer seems to be yes, but not many. There was one further British country whose market remained open - South Africa. Philips had recently opened an office in Johannesgurg in 1929, incidentally some two years after the establishment of their N.Z. branch. It is known that Philips receivers were being sold in South Africa by 1931, so it is quite possible that the 2510 was among the models available.

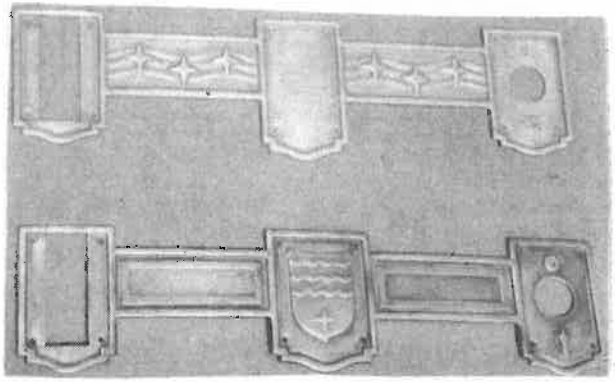
Two non-British countries where Philips products were early on the scene were Argentina and Brazil. As examples of the 2510 have surfaced in the latter country in recent years it seems likely that this model was sold there. In addition, old advertisements have been sighted offering proof of importation.

DISTINGUISHING FEATURES

At first glance it might be thought that all 2510s were the same, but a closer examination will reveal several minor differences between early and later models. Firstly, though, a small mystery exists regarding the words "Assembled in N.Z." to be found marked on a metal plate attached to the rear of early models having serial numbers in the 500 to 800 range.

So far, no satisfactory explanation of this marking has been suggested. Can it be taken at face value? Are we to believe, bearing in mind the date was 1930, that any receivers so marked were actually assembled in this country from kitsets sent out from Holland? Bear in mind, too, that the type of construction used would not readily lend itself to such a procedure. Furthermore, from the available evidence, only a few hundred sets at most were so marked; the majority still in existence are marked "Made in Holland". One suggestion is that the words Assembled in N.Z. were a ploy to make it appear that the 2510 was not of 'foreign' origin, yet if that were the case why was this never advertised?

The simplest way to tell at a glance whether a particular receiver is an early or late model is to note the style of logo embossed on the main escutcheon plate; those embossed with six stars are the earlier, those with a single star are the later. Be alert to the possibility that a certain amount of cannibalisation has gone on over the years so that some receivers may be found which do not confirm to this rule. Another point to note is the presence of a nickel-plated surround covering the keyhole on later models.



DESCRIPTION

As a mains powered TRF in a chest type cabinet with separate loudspeaker, and with two screen-grid RF amplifier stages, the 2510 was a European equivalent of familiar 1929/30 American receivers such as the Atwater Kents, Crosleys and Philcos. There are interesting design details which illustrate some of the differences between contemporary American and European technology and construction.

Most 2510's were supplied with a "Sevenette" free standing moving iron speaker, but an alternative was Philip's first permanent magnet moving coil speaker, the "Permagnetic", available in several cabinet styles including a locally made, rather plain console cabinet and the unusual "Consolette", which consisted of a table to support the receiver and with the speaker mounted underneath.

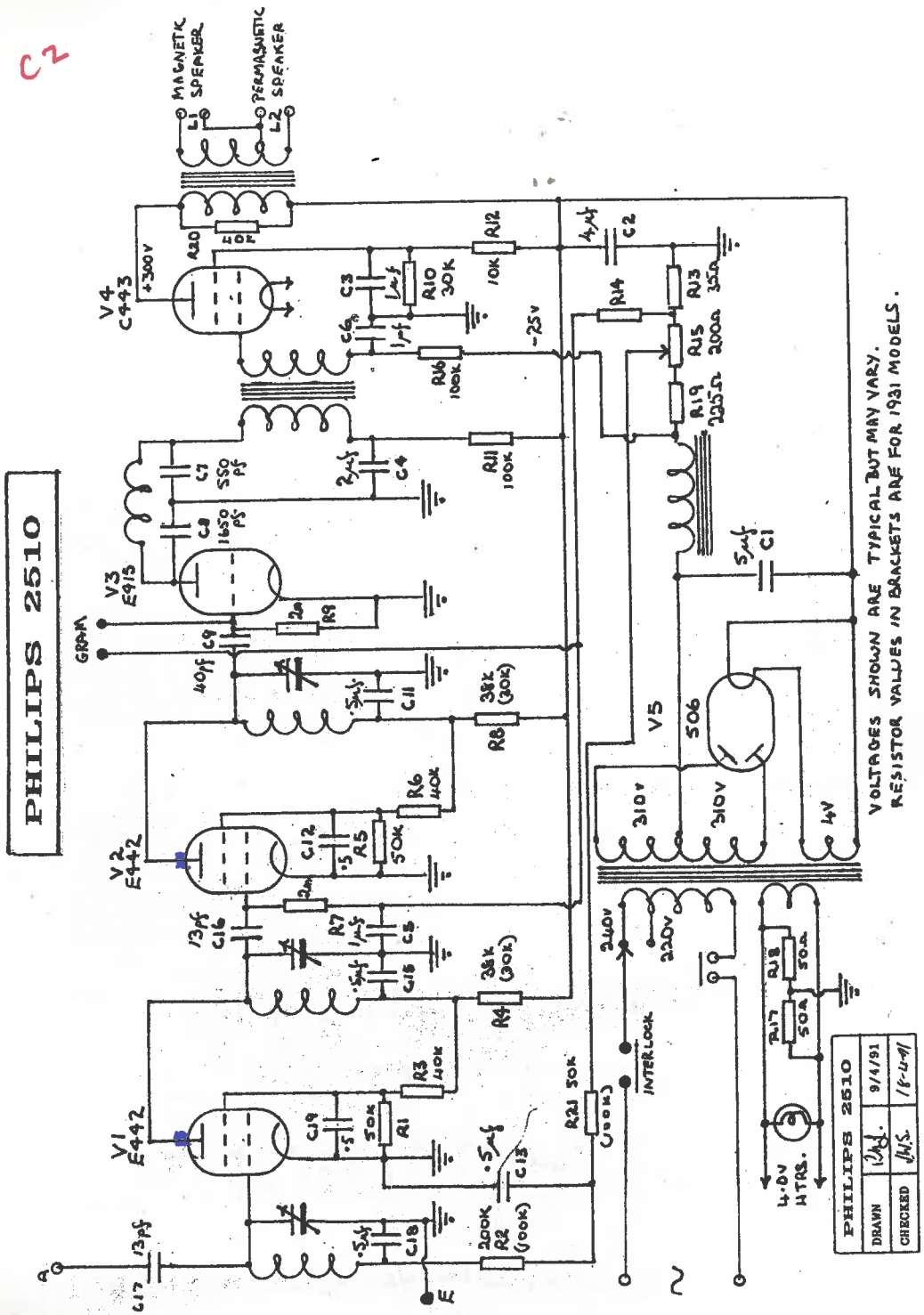
Except for the on/off switch, there are no controls at the front of the receiver. Instead, tuning and volume controls are at the ends of the cabinet. One odd feature has created a lot of speculation. There is a lock for the lid which, despite what is claimed in the instruction book, does not prevent unauthorised use of the receiver. All it does is to prevent access to the interior. It is not necessary for safety - there is an automatic cut out switch connected to the lid.

The colloquial term "tin trunk" for the 2510 is not really very appropriate. In fact, the case consists of a metal frame and panels of "Vanherite", made from sheets of paper impregnated with thermosetting resin and cured under high compression. A printed wood grained pattern on the outer paper sheet provides a high gloss decorative finish. The removable panel on the underside of the cabinet, providing access to the wiring, is a feature which was to become common Philips practice.

Internal construction of the 2510 is quite different from the conventional chassis. Instead, the Philips format is more three dimensional, the entire assembly being carried in a very solid metal frame. At the rear is a row of valve sockets and many of the larger resistors, wound on glass tubing. To the front of the valve sockets is a beautifully made brass vaned three gang tuning capacitor with an integral drum dial drive, and under this are the three cylindrical tuning coil cans. Shielding partitions across the frame provide mounting surfaces for smaller components. Separate covers are used for the tuning capacitor and power supply, and there is a compartmented shield box for the first three valves. The compact power supply is a separate module at the left hand end of the cabinet.

One electrical difference is right at the aerial terminal. American broadcast receiver practice was to couple the aerial inductively with a small primary winding on the tuning coil whereas Philips favoured coupling via a small capacitor, in the case of the 2510 13 pfd. In later models, a second capacitor of

the gang does not have a "cover", the part visible from the top is the actual gang frame, the gang itself being mounted upside down



only 4 pfd was provided for use with large aerials. Results with capacitor and inductive coupling were similar, with a significant increase in sensitivity with increasing frequency, and they both had the disadvantage of detuning the input stage with change of aerial. Later these methods were superseded by high impedance primary windings with an even response and minimal detuning.

Using a type E442 screen-grid valve, the first amplifier stage incorporates the gain or volume control R15, a 200 ohm variable resistor forming part of a string of bias resistors in the negative return lead of the power supply. Gain is controlled by varying the bias on the input stage control grid. Contemporary American designers preferred to use variable cathode bias or screen voltage, often linked to another variable resistor connected to the aerial.

In another divergence from the common American practice of using primary windings for RF coils, Philips connected the anode of the first R.F. stage directly to the second tuned circuit. This has the disadvantage of placing H.T. voltage on the tuning capacitor stator, and can provide an undesirable coupling between the following grid and the H.T. system. Another potential problem is that the associated coupling capacitor must have exceptionally good insulation to prevent the grid bias of the following valve being upset by the leakage of H.T. voltage. In a similar manner, the anode of the second R.F. stage, another E442, is directly connected to the detector tuning coil.

The detector is a traditional grid leak type, sensitive, but in 1929, already obsolescent in high quality broadcast receivers. Its chief disadvantage in this application is serious distortion at high modulation levels, a greater problem today with transmissions relying on heavy audio processing to compete in the ratings game. Connection of a gramophone pickup is ingenious. Plugging the pickup, which would have had its own volume control, into the socket at the rear of the cabinet automatically connects the valve grid to a bias line, converting the detector into an amplifier stage. Early sets used a type E415 triode but for later models a higher amplification factor E424 was specified.

The pentode output valve is the major feature distinguishing Philips technology in the 2510. Americans were still using triodes, usually a pair of low-mu type 45 valves. Philips engineers had invented the pentode a couple of years previously but it was not until 1931 that America finally adopted it. A single C443 produces about half the audio power of a pair of 45's, but requires only one third the anode current. By using the more sensitive and efficient pentode, Philips receivers saved one stage of amplification.

The output transformer has a tapped secondary winding connected to two sockets, L1 for high impedance moving iron speakers and L2 for connecting directly to voice coils. Rather than being switched, the tone control capacitor is mounted in a "tapon" type of plug called a "tone filter". This is plugged into L1, and high impedance speakers are connected to the back of the filter. With paper filter capacitors and a filter choke in series with the bias resistors in the negative lead, the power supply is quite conventional. The full wave rectifier valve is a Philips type 506 with a 4 volt 1 ampere filament.

RESTORATION

Restoration of the 2510 calls for a degree of dedication. Take some time to become familiar with the various components and their locations. When you do start work, remember that THE VALVE TOP CAPS ARE THE ANODES AND HAVE A HIGH VOLTAGE ON THEM!

A major problem is finding replacement valves. The sharp cutoff E442 and the equivalent S4V Mullard screen grid RF amplifiers were obsolete within a couple of years. Their successors, the Philips E452 and Mullard SP4, are far too tall. If your main concern is to get a 2510 operating, some of the smaller English 5 pin RF valves will do. Two types that will fit are the Mazda AC/SG and the Osram Catkin VMS4. However, if variable-mu types are used in the V1 socket, the range of volume control will be inadequate.

The height restriction has created another restoration problem. To fit oversized replacement valves, which by now were shielded anyway, many servicemen discarded the valve shield box or cut holes in its top. Fortunately, it is possible for a competent sheetmetal worker to make a copy. Not so easy to remedy was one effort where, to accommodate a SP4, some vandal cut a hole in the cabinet lid!

The situation with the C443 is a little better, with the CV1167 and Mullard PM24A as direct equivalents. Often though, a type E443 or similar 5 pin power pentode will be found in a 2510. These alternatives should be used with caution as their greater anode and filament currents could overload the power supply.

Type E415 or E424 detector triodes are easier to find, and equivalent 4.0 volt 1 ampere heater general purpose triodes were made by all European manufacturers. Many rectifiers with 4 volt 1 ampere filaments can substitute for the 506. Some suitable types are Philips 1805, 1821 or 1823, Brimar R1, Marconi/Osram U10, and Mullard DW2.

Typically of Philips safety philosophy, the cabinet lid is fitted with a mains cutout switch. This is not much of a problem as best servicing access is from underneath. Removal of the bottom panel reveals most of the wiring, varnished cambric sleeving over tinned copper wire. In some instances, the original sleeving will have perished into a sticky mess. The best remedy is to unsolder each lead one at a time, and renew the sleeving. Mineral turpentine is useful for removing residues. (Remember that earlier I used the term dedication.) One benefit of this work is that you become familiar with the circuit!

Next test the capacitors, which are sealed in tinplate boxes mounted on the partitions, for leakage. The method of grid biassing is not tolerant of low resistance bypass capacitors. Check C5, C6, C13, and C18 carefully. Replacement is simple enough. Uncrimp the edges of the box to release the fibre top and dig or melt out the pitch. Replacement mylar or polyester dielectric capacitors will fit inside easily. Refilling with pitch is desirable, but optional. Do not have it too hot or the contents will be damaged.

Be especially wary of the grid coupling capacitors C9 and C16. The slightest leakage here can be disastrous. They are inside small cylindrical fibre sleeves which should be retained, and are best replaced by tubular ceramic types

Resistors are of novel construction, being wound or deposited on glass tubes. Contact is made by soldering to metal rings at the ends of the elements, and R3 and R6 have extra rings to serve as tie points. The large wirewound resistors do not give much trouble, but the high value types R5, R7, R9, R14 and R16 are likely to have considerably altered values. Some of these will be found inside sleeving and should be extracted carefully. To repair them, clean off the remaining resistive coating and insert new 1/4 watt replacement resistors inside the tubes.

Finally, Philips made the trimmer capacitors inaccessible unless the whole assembly is removed from the cabinet. This does mean that knobs and fittings have to be removed before attempting realignment, but on the other hand, there will have been less "tweaking" in the past.

Good luck!

Note:

The "L2" output sockets are intended for use with a Philips 'Permagnetic' (moving-coil) speaker of unspecified voice coil impedance. In an attempt to discover what the impedance is, calculations were made using the published figures for the OPT primary and secondary turns which appear in the 1931 Philips 2510 schematic diagram. These figures give a turns ratio of 15.33:1 which equates to an impedance ratio of 235:1. Knowing the C443 plate load to be 15K ohms, the impedance of the speaker voice coil works out at 64 ohms.

However, this figure is open to question as the turns ratio as measured on one receiver comes out at 23:1 which corresponds to an impedance ratio of 529:1. From these figures the voice coil impedance works out at 28 ohms. Take your pick! The latter figure was confirmed in one case by checking the DC resistance of a Permagnetic voice coil, which measured 22 ohms, and then applying the rule-of-thumb multiplier of 1.3 which gave an impedance figure of 28 ohms.

How can this discrepancy be explained? Were there two different models of Permagnetic speakers? If so, then there must have been receivers with two different output transformers. The mind boggles.

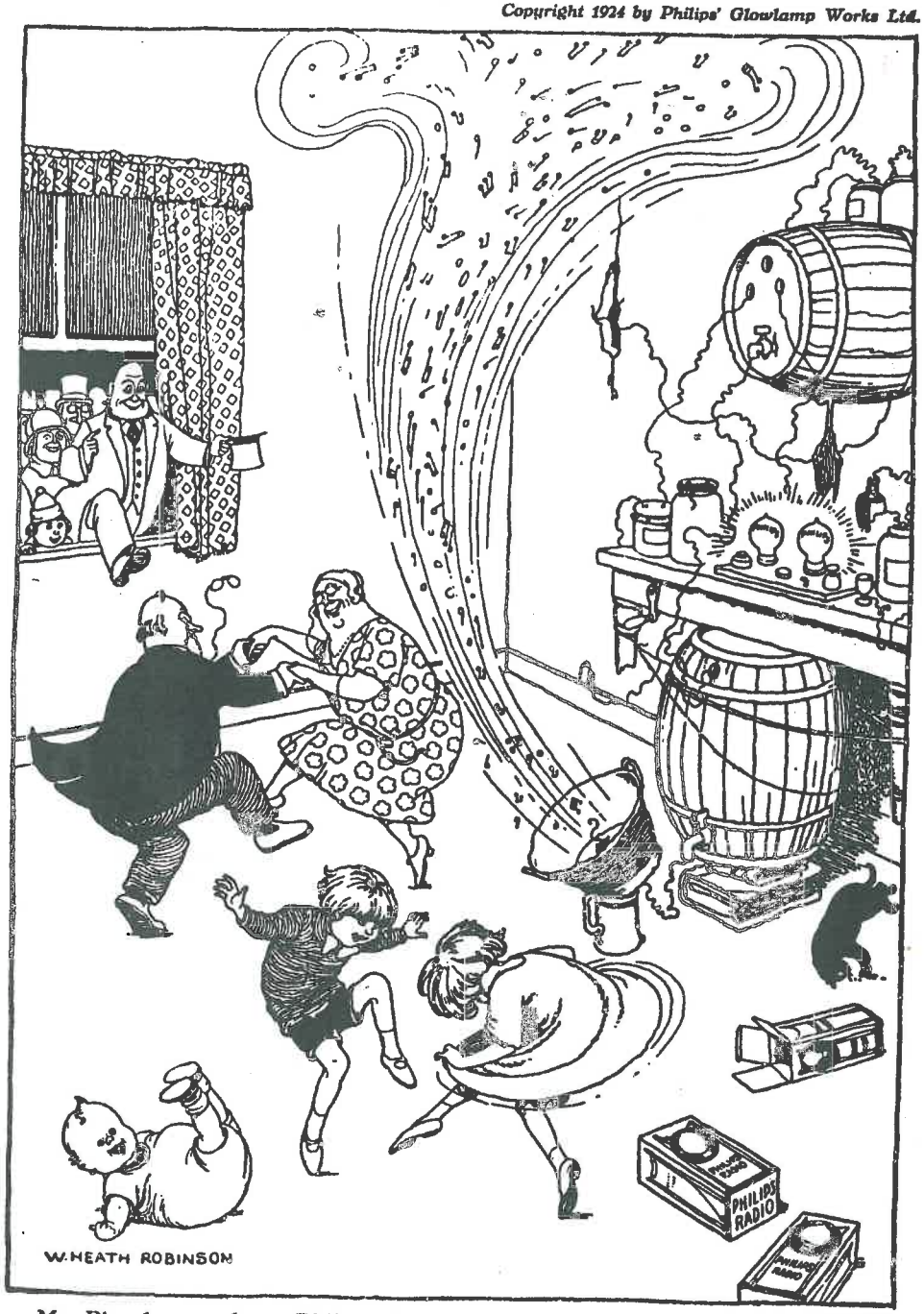
The authors thank all those members who kindly assisted by supplying details of their receivers. In all details of some 40 2510 receivers were received and collated, but even so it was not possible extract much information from a tabulation of the serial numbers alone. As yet, the mystery of the "Assembled in N.Z." remains unsolved.

WHO WAS Mr PIMPLE?

Nowadays, humour in advertising seems, sadly, to be a thing of the past The delightlful sketch reproduced on page 12 is one of several contained in a little booklet issued by Philips Lamps Ltd in 1924. The publication of this booklet in English raises the question of just where did Philips intend that it was to be distributed. It could not have been the U.K. as Philips valves were not licensed for sale there. So where?

Mr Pimple was a fictitous character, apparently created at Philips' behest, by the then well known English artist (what else?), W.Heath Robinson. Heath Robinson's characters were usually depicted as being busy constructing wildly impossible inventions and Mr Pimple is no exception.

Such was the popularity of Heath Robinson's work during the 20s and 30s that the phrase "a Heath Robinson contraption" became a byword for any ill conceived mechanical invention. Nowadays the words have all but passed into obscurity, but doubtless will be remembered by some of the long toothed fraternity.



Mr. Pimple now buys Philips' Receiving Valves every time and discovers that they give the very best results.

ONE APPROACH TO THE REACTIVATION OF VINTAGE RADIOS

BY JACK WHITTAKER (Conclusion)

With the radio now operational,

1.Check HT voltage which should be around 250V, if it is as high as say 300, probably either the speaker field coil is the wrong value or the power transformer has been replaced with one of an incorrect type. In either case, excess HT voltage needs to be corrected.

2.Having now 250V HT, check with multimeter all cathode voltages (excluding the rectifier tube). Most tubes should show about +3v, with the 6V6 showing approximately +12.5v. Note; Some receivers use a negative grid bias fed to the AVC and output tube- equivalent to the cathode figures eg -3 and -12.5.

3.Check all screen and plate voltages (mixer oscillator plate 6K8 should be approximately 95v). The first audio plate cannot be accurately tested without a VTVM or FET meter, refer to service manuals if necessary. RF and IF screens generally run at around 100v depending on tube type.

Alignment:-

First we need to consider the objectives of this exercise, simplistically this is to acheive maximum signal strength, efficiency, and to track the dial scale accurately.

The mixer (eg 6K8) oscillator operates generally the IF frequency ABOVE the incoming signal, hence the effect of the capacitor needs LESS capacity over its range to be linear (or 'track') with the incoming signal, that is why the 'padder condenser' is required. The effect is diminished or the need decreases with INCREASE in frequency as can be observed medium shortwave has usually a fixed padder and the top band will probably not have one at all.

I will here deal with broadcast band only. Accuracy of stations to marked dial position is sometimes not possible if the initial design was not accurate OR if coils or capacitors have been subsequently modified.

Step 1. To align the IF sections. We need to know the manufacturers IF frequency eg 455khz and set our signal generator to that frequency (it should best have been tested for accuracy with a frequency counter or the like) set it to a very LOW signal output level and attach the lead to or near the 6K8 grid lead.

Step 2. Attach the VTVM/FET voltmeter to read negative volts on the AVC line and starting from the 6K8 adjust the IF trimmers one by one for maximum AVC voltage. As there is interreaction here, this will need to be repeated several times until the maximum possible peak AVC reading is obtained. Both generator and voltmeter will probably have to be adjusted for output and readings during this stage. With most 'unrestored' receivers, this alignment alone produces an amazing lift in signal levels.

Step 3. Tune a station near the high end (NOT right at the top say a station around 1400) adjust the 6K8 osc trimmer so that it appears at about the correct dial mark, then peak both mixer and RF trimmers for maximum signal on the AVC voltmeter (the signal generator has been taken away and turned off before this stage) repeat this until maximum signal has been obtained.

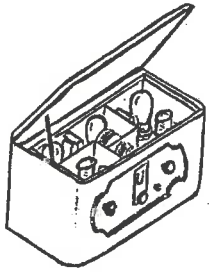
Step 4. Now ignoring all dial markings, tune in a much lower station eg 1YA observe the AVC voltage reading, adjust the padder while still keeping the station tuned in by the tuning knob (you may feel the need for three hands, but it is quite easy) adjust the padder for maximum AVC voltage, and if all is correct, when you have finished, the RF trimmers should still peak at maximum on 1Ya in the same position as 1YD/1ZM. As adjustment of the padder will affect setting of the oscillator trimmer, the trimmer will need to be readjusted to secure correct calibration of the dial at 1400khz, viz- steps 3 & 4 will need to be repeated until optimum results are obtained.

If you do not have a signal generator, the IF can initially be aligned as described by tuning a random station and adjusting for maximum AVC voltage, but this will not necessarily give dial tracking accuracy.

HAPPY ALIGNING.

BATTERY SET DAYS ..... by Tony Beard

This is a story of determination, relating to the days of 1932, when Battery radios were the means of entertainment and news in the New Zealand outback. It was also the time of a nation-wide depression when people who were fortunate to own a radio found it very expensive to buy large "Everready" or "Columbia" 45 volt "B" batteries to supply the necessary 135 volts for the radio H.T. supply. Although only a child of four at the time, I can remember the radio in my parents bedroom, but not much about the battery problems, which my father told me about, when he gave me the set many years later. Being a qualified chemist before turning to farming after the 1st. World War, my father went to great lenghts to manufacture his own H.T. battery. This consisted of three wooden boxes, divided into 30 4" squares and the whole sealed with thick layers of pitch to seal the individual compartments. Into each of these he placed a folded cylinder of zinc, inside of which was a layer of Salamoniac jelly, and inside this was a hessian bag containing Permaganate of Potash, with a ½" diameter carbon rod in the center. This was the Leclanche cell, or dry battery as we know it.
Ninety cells later he had the necessary 135 volts "B" supply, which worked well for quite a time. However, corrosion from the chemicals destroyed the connections so regularly that the project ultimately ended in failure and the radio was put away in a wardrobe and forgotten for eleven years, before finally being given to me to dismantle!!! What sacrilege. I would give anything to have that Set today.



Tony Beard's sketch, drawn from memory, of how his father's 1932 Courier 4-valve battery set looked. From his description the set must have been made by Radio Ltd as it is very similar to the one illustrated on page 128 of 'More Golden Age of Radio'.

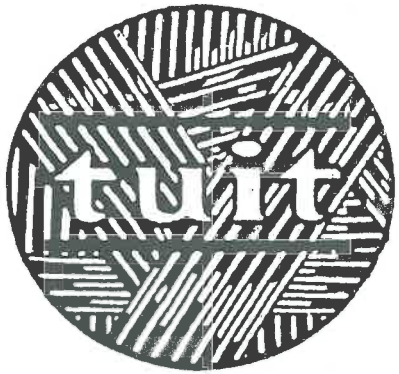
It was a COURIER four-valve TRF Battery set, in a beautiful wooden cabinet, with a lift up lid. The valves used were A615 and B609 types, with a Screen grid R.F. valve lying on its side, with the top portion fitting through a shield. The brass tuning condensers (which were ganged) and also the reaction and R.F. trimmer condensers were of Australian manufacture; the two audio transformers were Siemens, the dial was an American "Velvet Vernier" with the customary window escutcheon.
Being an all wave set, it had bakelite 5-pin plug in coils, a set of ten, I think. My mother told me once, they used to hear "BigBen" striking the hour, on short wave direct from England, and this could be heard clearly from outside the house.
For the filament supply, a six volt car battery was used, and every six weeks or so, my father would ride ten miles on horseback to a local sawmill, with the battery, to have it charged by Steam engine and generator, a service extended to many residents in those days.
The aerial used was the well tried and proven Beveridge type, a quarter mile long strung on eight foot high poles, and at the other end, was a 30,ohm rheostat in a spidery box, which grounded the wire to the correct level somehow! My father would have dearly loved to have owned a "MILNES" unit, marketed by Johns Limited in later years. This was a H.T. battery, could be charged from the 6 volt accumulator, then series switched to furnish 135 volts.
On the Broadcast band, one station that was often listened to, was 2AY, Albury, New South Wales, Australia, a station which is still transmitting today, after all those years.
I wonder, would we go to such lengths today, to endeavour to listen to the outside world? I am sure there are many just as keen who would. I include a sketch of the set as I remembered it forty-nine years ago. An hexagonal ornate, wooden case housed a reed type cone speaker, separately.

ROUND TUIT *

Bryan Marsh wants to know if you've got a round tuit, or is yours square? If you haven't got a round tuit then how about getting around to it? He means - have you got around to renewing your annual sub yet? If you haven't then this will be the last issue of the Bulletin you will receive. Send $15 to Bryan and you will have got a round tuit. His address is:

Bryan Marsh, Treasurer NRVRS
20 Rimu Rd Mangere Bridge Auckland

* With acknowledgement to RADIO AGE



AUCTION SALE

The recent auction sale of vintage radios and related items from the Harry Bryn estate was probably the largest of its kind ever held in this country. A total of 284 lots was offered comprising a wide range of items dating mostly from the late 1920s to the late 1930s. Included were about 25 early battery sets and quite a number of horn and cone speakers.

The highest price paid was $700 for an Atwater Kent 82, and the lowest was $1 for a 1957 Clipper. The sale took 4½ hours to complete and realised a total of $37,734. In spite of some prior wishful thinking, the prevailing economic conditions appeared to have no effect on prices and bidding was brisk on most items.

Anyoneinterested to know what each item fetched may obtain a priced catalogue by sending $2 to: Bryan Marsh 20 Rimu Rd Mangere Bridge Auckland.

THE KRIESLER 11-4 "SEALED" RADIO

by Darryl Kasch

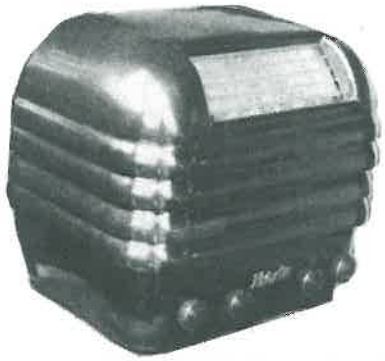
A truly unique set from perhaps the most prolific of the post-war Australian manufacturer, the Kriesler 11-4 was a four valve model in their so-called "Sealed Radio" range. Released in 1946 and believed to have been continued until 1950, thousands of these 'bubble' sets still exist, humming away. They seem to keep going indefinitely if they are used every day.

It is when one attempts to remove the chassis that you become aware of the louvre construction, it's easy to accidentally pull apart all four louvres. A potential trap is the use of washers on the chassis locknuts which does not allow a clean fit of the bottom shell to the rest of the assembly. One can struggle for hours, until one tries it without the washers, when attempting to refit the bottom. There are four locating holes alongside the mounting screws which simplify the matter of locating the screw holes. One can break the top of the cabinet unless great care is used when refitting the chassis. A good clean up with Brasso followed by an application of turtle wax and the cabinet is ready for reassembly.

Without being a technical person, I can safely say that the bias resistor and EL33 (where fitted) both pack it in on these sets. The first trap I experienced was the location of the earth return on the first electrolytic - it does not go direct to earth but to one end of of the two back bias resistors. A remark from a typical novice, you say! Anyway, it's not a bad idea to change the bias resistor to a square 5-watt type.

Alignment should be straightforward, there are adjustable padders and trimmers all round. Sensitivity should get down to 10 microvolts on broadcast; if it's nowhere near it then check the mixer valve and the IF transformers, though it's seldom they give trouble unless the set has been out in the weather for an extended period!

One other tip on restoration that that can be applied to any speaker, especially the 5" types found in these sets, gently tuc some cotton wadding behind the cone so that it is pushed forward slightly. Then, with the speaker facing upward carefully wet the outer edge of the cone all round, using an eye dropper. After it is dry remove the wadding and you will be surprised at the result if the set had previously sounded tinny.



BEAUTY
Back and Front

WAIKATO AREA MEETINGS

The second informal meeting of the Waikato group was held on the 24th March, the venue again being Frits Willemsen's place. Seven of those who attended the first meeting were present and there were two new faces. Four apologies were received. We are going ahead slowly but surely.

Again there was a selection of sets available for trade and Clemens (a new face) found that by arriving with a good cabinet you can go home with the same set plus another older cabinet with a going chassis. No doubt his wife and new twins will now have a rival in spare time stakes!

Topics discussed were the polishing of coil cans by buffing, how to locate knobs, the different models of Bell 'Colt' radios and their cabinet colours. Also there was a talk on the chrome plating of chassis which touched on the need to copper plate first and how to save money by doing preparatory work.

Another excellent afternoon tea , which seems to be the hallmark of our meetings, was provided by Mrs Frits whom we again thank.

For our next meeting we have been invited to Chris Hollis' at 13A Princes St Cambridge. Date: 23 June, Time: 1.30pm.

A reminder: the Cambridge Radio Club sale will be held on May 11.

It would be nice to hear from Bay Of Plenty and Rotorua-Taupo members who have received meeting notices so that I can let them know they are very welcome at meetings. Just drop a line to me at 3 Haines Tce, Te Kuiti.

Eric Carter

WELLINGTON AREA NOTES

Feb.3rd Meeting. Bob Neil presented a talk and workshop demonstration on how to form acrylic sheet to make replacment dial glasses by using home workshop equipment. A tape of this talk is available to anyone interested. Post a blank C60 tape with return postage to Donald Laing 85 High St Eketahuna.

March 3rd Meeting. Talk by Gordon Baker on receiver alignment using a wobbulator and 'scope.

April 7th Meeting. On this occasion there were 23 members present. Discussion centerd on the forthcoming combined vintage radio and Ham junk sale to be held on Sat.17 Aug at the Municipal Hall, Holloway St, Carterton. The hall will be open on Friday night and at 7am on the Saturaday morning to receive goods for auction.

A short talk was given by Robert Hatton on how to repaint Atwater Kent and Philips front panels. Information on this subject is avaialble from Bob, write to 40 Rose St, Wadestown, Wellington. This was followed by a talk from Ray Knowles on cabinet restoration with particular emphasis on saving the original finish rather than stripping and refinishing. Suggestions of how to treat scratch marks and borer holes and other damage was followed by a description of how Ray himself goes about stripping and refinishing when this is unavoidable.
Definite information on the sale of bits and pieces from the Harry Byrn estate has now been received from the auctioneer. The sale is to be held at Percys Auctions, Masterton commencing at 10am on Sat. 25 May and continuing on Sunday 26 until everything is sold. NOTE - this is a sale of incomplete radios and parts only and there will be no catalogue issued.

There is also like to be another big sale later in the year, but at this stage no details are available. Donald Laing promises to provide details as soon as things are finalised.

(Compiled from information received from D.Laing)

OBITUARY

CHARLES STANLEY BREHAUT

Stan Brehaut had a lifelong interest in radio, though it was by no means his only interest, having built his first receiver in 1923. Not long afterwards he went into business with his brother and sold some of the first radios in South Canterbury. At that time two of the makes handled were Bremer-Tully and Gilfillan.

With the coming of the 'all-electric' era the agency for Majestic was acquired and sales were brisk until the American company crashed a few years later. After that the firm of Brehaut Bros concentrated on selling Ultimate radios.

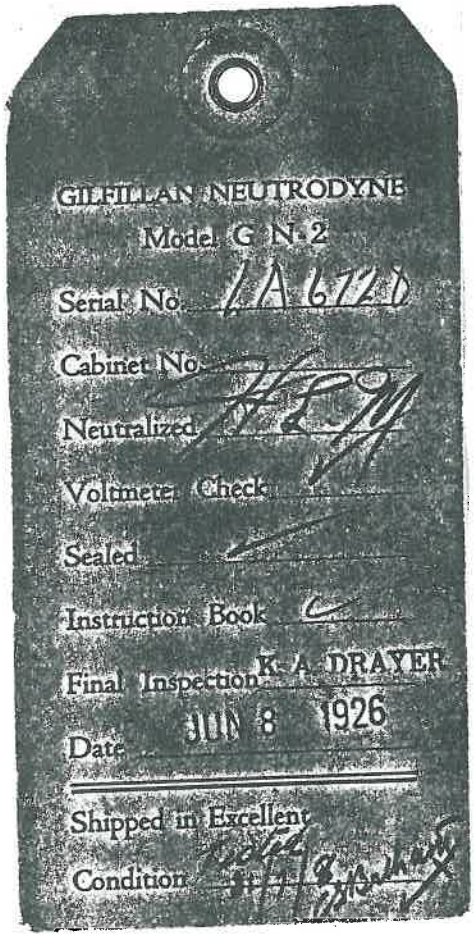
The family business, which later became known as Stan Brehaut Ltd, grew to be one of the largest home appliance sales and service dealers in the area which, after Stan's retirement in 1979, was carried on by his son Alan.

Although Stan had many other interests, he always retained a soft spot for the early battery sets he had sold in his younger days, and in later years was even able to get some of them back again to put in the famous Brehaut collection.

Over the years Stan and Alan built up one of the largest and finest private collections in the country, a collection which, incidentally, contained not only radios but also such things as music boxes, motorcycles and kerosene lamps.

During his retirement Stan spent endless hours painstakingly restoring many early battery sets and horn speakers and examples of his workmanship now grace the Brehaut collection.

Stan is survived by his wife Effie and son Alan to whom the NZVRS Committee extends deepest sympathy.



This original Gilfillan shipping tag is one of several retained by Stan Brehaut for sentimental reasons. It refers to a model GN-2 received, tested and sold by him on July 31,1926.

WANTED

One E415 valve 5 pin U.S. base. 1936 and 1937 Lamphouse Annuals; 1934 Lamphouse catalogue and info on when these were first published.
Phil McGechie 11 Rosario Cres. Red Beach or phone collect HBC 4266661.

Legible instruction plate from bottom of AVO 7 multimeter, written copy of same, or complete unserviceable instrument for parts.
Bruce Devenport Private Bag Gisborne Ph.06-8628877 evenings.

Zenith fireside chair model radio. Circuit diagram for Philips pattern generator PM5500/01 ND-DQ-641.J.A.Thompson 32 Trent St Oamaru. Ph.03-4345727

WHERE TO GET IT

People sometimes ask where they can obtain various items needed to complete the repair or restoration of old radios and when told of the existence in the U.K. or U.S.A. of specialist suppliers are suprised to learn of the vast quantities of parts, including valves, which are available. In addition to having stocks of modern new parts, and "new old stock" (N.O.S) parts, some firms are offering an increasing range of reproduction parts which includes such items as dial scales, knobs and speaker grille cloth.
The two firms mentioned below are known to provide reliable and prompt service and are experienced in handling overseas orders. NZVRS members need have no hestitation in ordering from them. Both firms issue excellent catalogues which are available for a nominal charge, and both will accept payment by Visa or Mastercharge credit cards.

ORDER FORM

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P.O. Box 1810 • Tempe, AZ 85280 • U.S.A. • (602) 894-9503 • FAX (602) 894-0124

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NZVRS TAPES LIBRARY

A list of titles which are available for borrowing was published in the November 1989 Bulletin (p.20). Since then Eric Reynolds has gone back to Australai and we now have a new tape Librarian. He is -
David Crozier 154 Grey St Onehunga Auckland Ph. (09) 665-954