WANTED (continued)

Eddystone communications receiver model 940 will pay good price for a good unit. Peter Walsham. Ph 09-2384520 evenings.
e-mail lynda-peter@xtra.co.nz

Bell Colt green cabinet & knobs. chassis any condition. Brian Craig phone 06/8337916 or email merbri@globe.net.nz

Seek the following issues of Wireless World to complete my collection. Jan 54; Sept 55; April, Dec 60; July 67; Mar 70; Jan, Feb 74; June, Sept, Oct, Nov 83; Feb, July, Aug 84; July, Aug, Oct, Nov, Dec 85; Jan, June, July, Oct, Nov, Dec 86; Jan, Feb, Mar, April, June, July, Oct, Nov, Dec 87; all issues for 88: Feb, April, Oct, 89; April 92; Jan, Dec, 96; Feb 97; Oct 99; July 2000. Reasonable price paid. Reg Motion, 2A Hazel Tce, Tauranga. Ph 07-5768733, email regmotion@xtra.co.nz

Dial glass for dual wave Bell Colt. Backboards for Mullard model 15, model 649 also Bush model DAC90A. Paul Burt, 44 Hastings St., Christchurch 8002. Ph 03-3327157, Fax 03-3327059.

Valve type EBF83 for car radio. Back cover for Pacemaker model 5153. Vibrator/PSU box for Philips car radio using rimlock valves. Wayne Griffin, Ph 09-5289118, email zl1ujk@xtra.co.nz

Wanted copy of circuit for Courtenay radio.Model 7A year 1932 7 valve TRF diode detector. Ring Collect 04/5670917 Jim Baxter. 26 Holyoake Cres. Avalon Lower hutt. Email jim.baxter@paradise.net.nz

CORRECTION

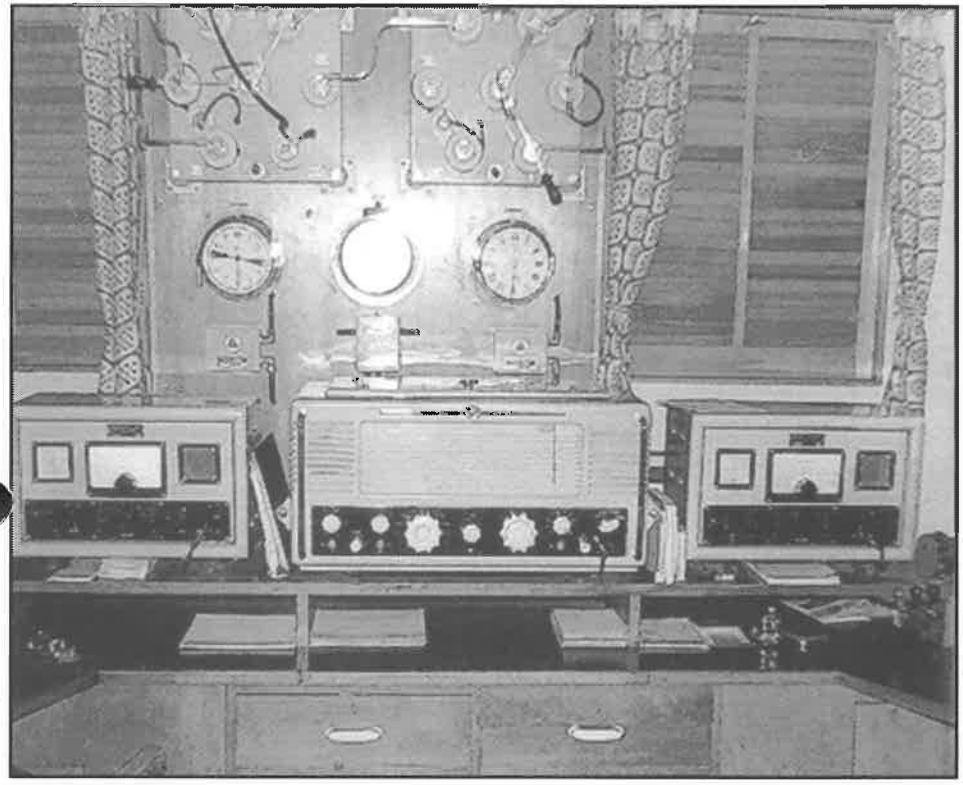
The above picture was reproduced on the front cover of our Journal for November 2000, Vol 21/3. The caption attributes the display to the Taranaki Technological Museum but the photo is of the telegraph display at the Ferrymead Museum.

Apparently the photo used had inadvertently crept into the photos at the Taranaki museum and had been handed to us in mistake. The error is regretted

An **INDEX** of all issues of this journal containing not only the title, location and author of each article but also some key words to assist in searching on the subject is published on our Internet Web-site, www.nzvrs.pl.net . If required a printed copy of this index can be obtained for $5.00 from the Treasurer, David Crozier, 154 Grey St, Onehunga, Auckland. Ph 0800-187161.

N.Z.V.R.S. Bulletin

NEW ZEALAND VINTAGE RADIO SOCIETY INC.
Vol. 24 No.1 Feb. 2003



The IMR54 in the Radio Cabin of CARINTHIA/GVDQ

NEW ZEALAND VINTAGE RADIO SOCIETY INC.

A non-profit organisation devoted to the preservation of early radio equipment and associated historical information.
(Web site - http//www.nzvrs.pl.net email address office@nzvrs.pl.net)

PRESIDENT: Ian Sangster, 75 Anawata Rd, Piha, R.D, New Lynn, Auckland 1250. Ph 09-8149597, email: mailto:sangsfam@clear.net.nz

SECRETARY: Paul Woodcock, 2 Levy Rd, Glen Eden, Auckland. Ph 09/8184740. General correspondence, requests for purchase of books, badges and power cable are handled by the Secretary.

TREASURER: David Crozier, 154 Grey St, Onehunga. Ph 09-6365954or 0800-187161, email- dckh@pl.net Financial and membership matters are handled by the Treasurer. A list of members is available on application to the Treasurer with a self-addressed, stamped envelope.

LIBRARIAN, Ernie Hakanson, 17 Williamson Ave, Grey Lynn, Auckland. Ph 09/3766059. Requests for circuit diagrams, books and magazines (for personal use only) are handled by the Librarian at a small charge. Back numbers of most NZVRS bulletins are also available from the Librarian at $3.00 each for Vols 1 to 10 and $4.00 for issues from Vol 11 onwards. Cheques to be made out to NZVRS.

NZVRS BULLETIN is published quarterly in the months of February, May, August and November. Opinions expressed by writers are not necessarily those of the Society.
Contributions should be sent to the **EDITOR** , Reg Motion, 2A Hazel Terrace, Tauranga. Ph 07-5768733, email regmotion@xtra.co.nz
BULLETIN DISTRIBUTION is arranged by Rod Osborne, P.O. Box 2098, Tauranga.

AUCKLAND MEETINGS will be held at the Horticultural Society Hall, 990 Great North Rd. (opposite Motion's Rd.).
Mon. 17 Feb. at 7.30pm Capacitors
Mon. 17 Mar. at 7.30pm Auction sale.
Sat. 19 Apr. at 1.00pm AGM
For further details of the AGM see page 29 of this issue.

BAY OF PLENTY AREA MEETING
This meeting will be held at Gordon and Donella Baker's residence, 101 Hinewa Rd, Otumoetai, Tauranga at 1pm on the 2nd March. All welcome. Bring and Sell, Bring and Tell.

TARANAKI OPEN WEEKEND.
This meeting will be held on the 22nd and 23rd of February. All are welcome. For further details see page 27 of this issue.

WELLINGTON MEETINGS are held typically from 1pm on the second Sunday of every month at Tireti Hall, Te Pene Ave, Titahi Bay. For details contact Bob Hatton, 40 Rose St, Wadestown. Ph 04-4728788.

CHRISTCHURCH MEETINGS. For details of meetings contact Jim Lovell, 41 Yardley St, Avonhead, Christchurch 8004. Ph 03-3427760

FROM THE EDITOR

Gordon Cooper has provided us with details of a giant of a communications receiver in the IMR54. Graeme Lea describes some very finnickety work to restore an almost lost relic of wartime ingenuity. Peter Ingram dwells on ZC1s he has met in his travels. Dick Stevenson introduces us to an early shortwave radio followed by a reprint of Frank Bell's comments on reception in 1923. Murray Stevenson continues describing his research into the 3 pin Australian plug and we publish another index of NZ receivers as compiled by the late John Stokes - this time it is those made by Collier and Beale of Wellington.

Area meetings of groups of members are becoming very popular. Waikato area held a successful 2 day meeting last November and Taranaki area is to hold its second 2 day meeting in February. These open meetings are extremely useful in bringing together our otherwise widely scattered membership thus offering members, and their partners, an opportunity to share experiences, swap items and make new friends. Reports on these meetings are welcome and are always published - they serve to advertise to nearby members the advantages which are gained by attendance.

Our web site continues to grow in content and in popularity. As well as forming a source of up-to-date and relevant information for members it is attracting a deal of attendance from outsiders which is all to our advantage in popularising our activities and interests.

FRONTISPIECE.
Radio cabin of the CARINTHIA. Centrally placed is an IMR54 flanked by two emergency receivers.
photo<http://quicksitebuilder.cnet.com /carinthia/merchantnavy/id21.html>

NEW MEMBERS

Les McDonald	Australia
Geoff Edwards	Christchurch
Tom Lewitt	Upper Hutt
Peter Anderson	Waihi
Greg O'Toole	Australia
Chris Prouse	Auckland

70 YEARS OF RADIO VALVES

GOLDEN AGE OF RADIO

MORE GOLDEN AGE OF RADIO

These famous books by John Stokes available at discounted price to members from our Secretary , Paul Woodcock
2 Levy Rd., Glen Eden, Auckland
Ph 09-8184740

RESIDUAL CURRENT DETECTORS
Available to members at $20 + $5 p&p. from our Treasurer, David Crozier
154 Grey St., Onehunga, Auckland.
Ph 0800-187161

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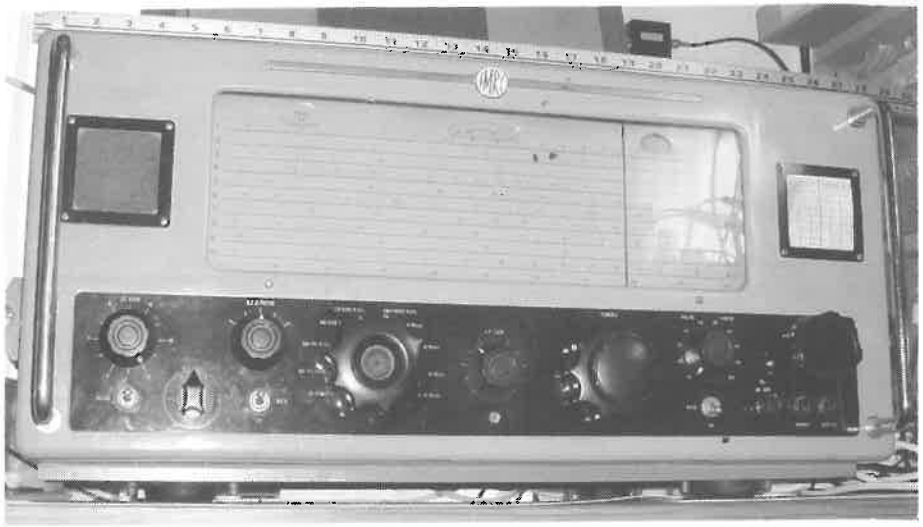
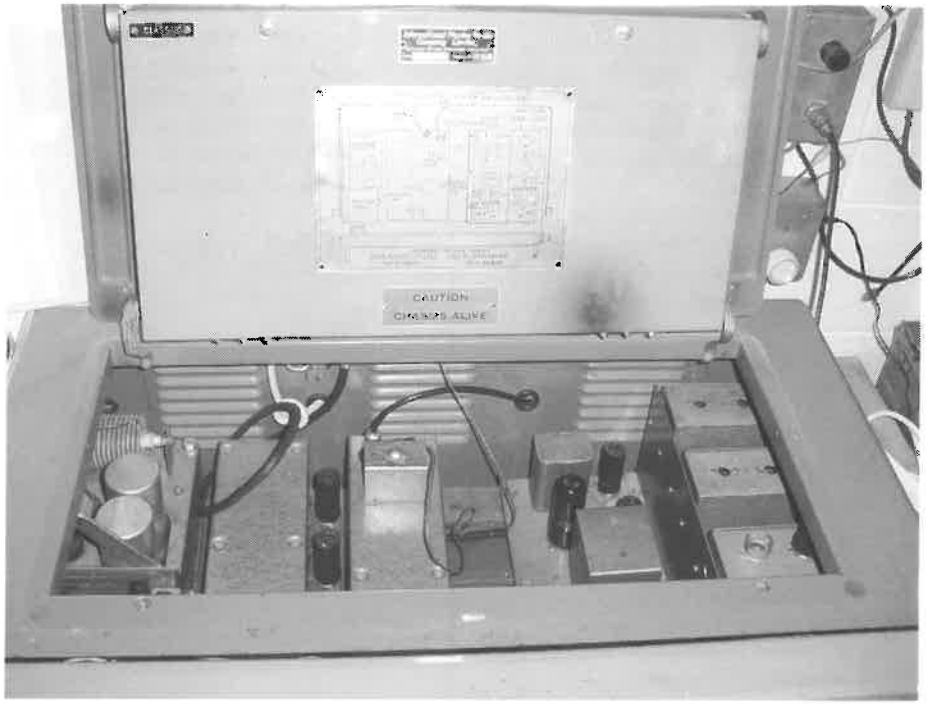


Front Panel of the IMR 54



Interior of the Cabinet

IMR 54 (A Giant Eddystone)

Gordon Baker

Recently I had the good fortune of adding another rare example to my ever growing collection of communications receivers. I saw an advert in an amateur radio publication for marine equipment being offered for tender. I promptly replied and to cut a long story short I am now the proud owner of an IMR 54 in nice cosmetic condition and other various marine radio bits and pieces. This actual receiver I first saw when I was servicing television receivers in the mid 1970s on the inter-island ferries for the N.Z.R., my example being the main receiver for Aramoana.

This IMR 54 was part of the original equipment fitted to Aramoana when she was first commissioned in 1962 to ply the Cook Strait between Wellington and Picton. Aramoana like its sister ship Aranui had a fully equipped radio cabin with all the equipment needed to sail in international waters, this being part of the original specification.

My receiver came with full documentation, the handbooks being quite comprehensive. The origin of the receiver is clearly stated in the handbook - the International Marine Radio Company (IMRC) of Croydon England. The main schematic bearing the International Marine Radio Company name is dated 1952 thus the design was 10 years old when the set was fitted in Aramoana.

A close examination of the receiver showed it to bear all the hallmarks of an Eddystone in its circuit design, cosmetic attributes and general layout. But, I have never seen a supposed Eddystone this big and so solidly constructed. This behemoth is over 28 inches (71 cms) wide and weighs in at a very modest **134 lbs (60.9 kg)**; truly not portable but built for the roughest conditions the marine environment can subject it to.

I searched the Internet and cruised all of the Boatanchor sites and even the Eddystone sites but could not find anything pertaining to the manufacturer of this receiver. I was fairly sure that IMRC did not manufacture this beast, the more I looked at it the more convinced I was that it was a scaled up Eddystone 680X. Eventually I found a merchant navy website. (RIO Galleries) which gave a couple of pictures of the 1MR54 sets installed in radio cabins stating "these beautiful receivers were manufactured by Eddystone" This is the sum total of the data I have been able to find, to date, on the true origin of the IMR 54.

IMR 54 is built like the proverbial battle ship. The handbook states that "all components and materials are of tropical finish to the latest specifications". I think they mean that the components and materials are more than adequate for the job. The cabinet is finished in stove enamel grey with chrome plated handles and fittings of a very high standard with no expense spared. Very generous rubber shock mounts are fitted to the bottom of the cabinet.

This receiver is a 12 valve single conversion superhet covering 15 kHz to 31 MHz in ten bands. One has to have a strong wrist to change bands due to the complex set of switches and linkages which change the RF and IF coils on certain bands. The IF is 110 kHz on the bands below 600 kHz and 465 kHz on the bands above 600 kHz with the exception of band 7 which covers 92 to 240 kHz. Band 7 uses the 465 kHz IF to avoid tuning across the 110 kHz IF with the inherent problems which would occur.

The dial, built to the excellent Eddystone standard, drives two four gang tuning capacitors. It is a two speed geared drive giving reduction ratios of 125 to 1 and 25 to 1. This mechanical band spread converts the 16 inch dial scale to a scale with an effective length of 160 inches on each band. There is absolutely no back lash in this set up; magnificent.

This set has no power transformer and is designed to run on 110 volts AC. or DC. or 230 volts with a suitable dropping resistor. Note the warning on the underside of the cabinet lid. I am also the proud owner of the equally heavy rotary converter provided to run the set off 24 volt batteries if required. The set consumes 82 watts at 110 volts AC or DC supply.

Valve are standard miniature 7 pin 6.3 volt types (6BA6, 6BE6 etc) apart from the output valve which is an octal based 25L6. Valve heaters are connected in series and are fed via a negative temperature coefficient resistor (Brimistor) which limits the high current in-rush that would otherwise occur at switch-on (valve heaters have a lower resistance when cold).

The IMR 54 was not operating when received but I was assured by the previous keeper that any problems would be minor (where have I heard that before). Anyway, because of its mass, work on this monster had to be logistically determined. The only way to do it was to completely remove the chassis from its cabinet, unwiring the antenna leads and power connections then placing it on its side so that components and valves could be accessed without having to move the chassis, which alone weighs more than one hundred pounds. Three Weetbix and fruit were consumed before the chassis was placed on the service bench! One of the mains fuses was found to be open circuit. This one amp fuse was replaced and the power slowly cranked up with a Variac feeding a 115 volt step down transformer. This gave dial lights only, no valve heaters. The 5 dial lamps are 24 volt festoon types connected directly across the 110 volt supply, enough to illuminate the entire radio cabin. So it was looking at just a case of an open circuit valve heater chain.

Serendipity was starting to kick in as I decided to remove and test the 25L6 first to discover it had an open circuit heater. In the cabinet lid is a caddy of spare parts including a spare set of valves, fuses, crystals, dial drive cord, etc. Some of these spares had been purloined previously but there was a spare 25L6.

Replacing the 25L6 gave me no results so the trusty volt meter was put into action. There was no voltage on the heater of the 25L6 which is at the top of the heater chain: the heater chain being fed by the Brimistor, but where on earth was that Brimistor hiding? The power supply sub-assembly which is a separate chassis is hinged to gain access to the bottom side. Undoing the securing bolts and hinging the chassis up revealed a "cracked apart" Brimistor. Replacing this with a similar unit bought the set into life. One can only imagine the fault was caused by a catastrophic failure within the 25L6 destroying the Brimistor and fuse. All that was needed now was a quick tidy up where previous service personal had replaced components around the 25L6 and some lubrication of a tight dial mechanism to have the set working to a first class standard.

This IMR54 is a very good performer for its age and design. It has an extremely good dynamic range and an excellent frequency stability unlike some other Eddystone models I have encountered. The only thing I could not try is the 465 kHz crystal filter as it and its spare were missing. The sets only drawback is its size and weight. It is a very welcome addition to my communication receiver collection, a true Boatanchor.

A VERY TESTING PROJECT

Graeme Lea

The story starts at the time of the auction of the Don Sutherland collection about two years ago. Up on the top shelf in a box amongst the many radio valves he had in storage I happened to spot an old valve tester that was in a very sad condition. As I have always liked old things made of brass and as it appeared to be more or less complete it was decided that purchase was the only option. I later found out that four selector knobs, five pointer knobs, the mains switch, and the indicator lamp bezel were all missing and there was obvious moisture damage to the solid brass front panel surfaces.

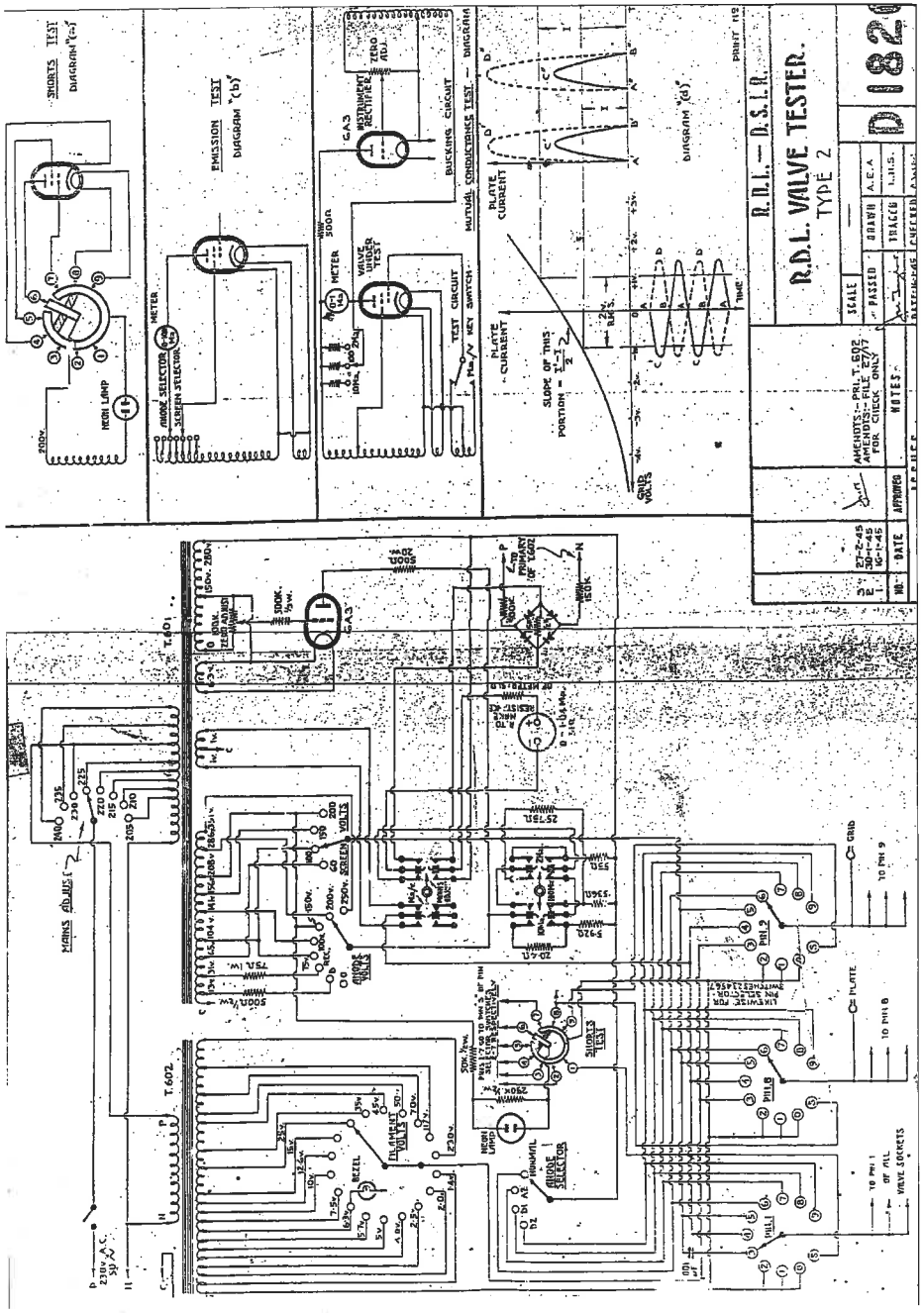
Once I got the thing home it was time to see what I could find out about it and my initial enquiries came up with virtually zilch, nothing. The only information found on the tester was on a small plaque on the front of its wooden box that read "D.S.I.R. Radio Development Laboratory Serial No 417" and on the tag tied to the power cord that had some more detail - this was an RNZAF Repairable Part tag that noted the instruments section (10S) and reference (N29), and this number is painted in red on the top panel of the unit as 1 OS/N29. This tag also informs us that the tester was in service at the RNZAF base at Woodbourne at the time it was sent somewhere to have the selector switches checked at some time during April 1953.

An advertisement was then placed in the May 2001 NZVRS Bulletin to try and gather further information about the instrument. As a direct result, contact was made with a very kind gentleman in Auckland who happened to have a R.D.L. Type 2 tester complete with its original instruction manual, circuit diagrams and switch settings list. He offered copies of all the documentation he had and these of course were gratefully accepted and subsequently studied in detail over some considerable time. Advice was also sought from various people as to exactly how such a valve tester actually operates, as I am not a trained technician by any means.

I now know that I have a sample of the R.D.L. Valve Tester Type I from the Radio Development Laboratory of the Department of Scientific and Industrial Research. The following is an extract from the Type 2 Instruction Manual. *"Operationally this valve tester is identical with R.D.L. Type 1 and similar to the "Avo" valve tester, and the nine figure switching combination for any valve is the same for both types of instrument except in the last figure, and then only for valves with a top cap connected to a grid or plate."*

Restoration Starts:

The first action was to remove the instrument from its wooden case so that the rimu timber could be treated for a mild case of borer. This done attention was then turned to the mechanics of the tester. A list was drawn up of what appeared to be missing, broken or looked out of place (too long to list here) and the opportunity was taken to test the continuity of both the primary and secondary windings of the two large Radio (1936) Ltd transformers. The spot-welds on one of the transformer mounting brackets were found to have failed so epoxy was used to fix the bracket back to the front panel and this avoided any damage to the black crackle finish paint that would have been caused by having it re-welded. At some stage a Mazda Octal socket had been added as an upgrade and, unfortunately, the wire used was some of that dreaded rubber insulation (touch it, turns to dust type) - this was replaced with modern cable for safety reasons. While working on this area a suitable replacement on/off switch and indicator bezel were found and modern cable was again used for these as well as for replacement of the connections to the primaries of both transformers.

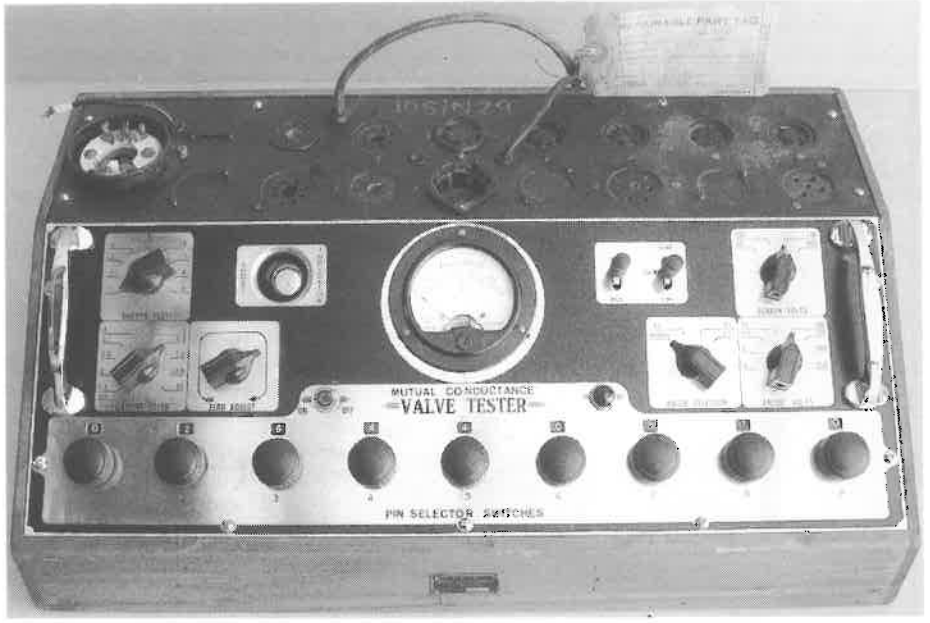


With the bulk of the electrical things out of the way it was time to look at the overall finish of the instrument. Removal of the lifting handles, meter and six of the switches enabled the two front panel halves to be removed for cleaning. On close examination it was found that moisture had managed to get underneath the lacquer finish so it was all very carefully scraped off - not just stripped, as that action would have affected the original etched bond between the panel surface and the black lacquer.

It was then necessary to repolish all of the unpainted areas of the panel back to their original high lustre, then the polished areas were masked off and the black lacquer resprayed. Several days were allowed before the masking was removed and the detail work started. Using an old upholsterers pin the grime from years of accumulation was removed from each of the letters engraved on the panel and then washed before applying new black enamel. Once this had hardened for about two weeks these polished areas were again buffed (to remove the excess enamel around the letters) using a piece of 6mm Balsawood about 20mm wide and shaped like a chisel along with some polishing compound to achieve the required finish and flatness. While the panels were being worked on the solid brass handles were sent to be rechromed so that they would look the part when everything was assembled again.

Before remounting the front panels they were given several coats of "Artists Matte Medium" instead of lacquer as I knew from previous experience that brass will still tamish under modern lacquer finishes. The other very useful restoration material I found and used during this project was a product called "Art Masking Fluid". This is a latex type fluid that can be just put on with a small brush in place of masking tape on sharp curves and corners or on awkward areas. Both products would be available at most reputable art supply shops.

And yes - it does work! Since completing the project I have had the enjoyment of actually testing several valves with this rare piece of kiwi history - pictured below.



BOOK REVIEW :- AUCKLAND RADIO - Alpha & Omega

Researched and compiled by D.C.(Doug) Morris, this book covers the history of Auckland Radio from 1912 when a spark transmitter and crystal receiver was installed in the Central Post Office building at the bottom of Queen Street until 1993 when the service, then operated from the handsome Musick Memorial building , was closed down.

Over it's years of operation Auckland Radio achieved an enviable reputation with other similar administrations, small ships, larger vessels and aircraft for its extensive and reliable services both by morse and by telephony. Doug has covered in exemplary manner, the political, technical, and operational problems which the service faced and the manner in which these were overcome as well as personal details, including photographs, of the many staff members who operated this service.

This book of 187 pages comprises a collection of contributions by staff members and extracts from published reports etc. joined into a coherent whole by Doug's own writings. There is a wealth of good illustrations (monochrome and colour). A significant contribution to the early history is a paper written by the late T.R. (Tom) Clarkson who was an engineer at Auckland prior to WW II and finished up as Superintending Engineer (Radio) for NZ Post Office. The printing is on glossy paper of A4 size which allows the adequate display of large photographs.

A limited supply of this book is available from our Treasurer at $30 + $5p&p

Nedijika (Ned) Matich

died peacefully, Friday, 20 December 2002, just after his 75th birthday following a battle with cancer. Ned was firstly a family man and will be greatly missed by his wife Ruth, their 6 adult children, their spouses and all their 13 grandchildren.

Ned was an upright man who had a very clear view on what was right and what was wrong both for himself and others. This served him well as a Justice of the Peace.

His many other interests were busses, the speedway where he raced stockcars, saloons and go-carts. He eventually became a scrutineer. Over the years, being a trained mechanic, he had owned a variety of "interesting" trucks and cars including his Rolls Royce. He probably owned 50 vehicles over his lifetime.

Ned also had an interest in mechanical devices such as gramophones, tape recorders, projectors and recently Citizen Band radio. Events and happenings around him interested him and he often wrote letters to the papers expressing his various concerns.

Ned enjoyed the garden that Ruth worked hard at - he mowed the lawns and did the edges.

He joined the NZVRS in 1982. His regular display at the Modelex shows were a drawcard for new members and he often gave the various VRS committees food for thought. At one time he had a large collection of radios in his "Radio Room" and welcomed visitors to his "Melody Farm". More recently he had reduced the size of this collection although his interest was still there.

He will be missed.

ZC1's I Have Met

Pete Ingram

I was in the ATC at High School and apart from a khaki field service cap with the initials of our discipline woven into the material in blue, we owned nothing. Well, we did have a Vought F4U 'Corsair,' but it was away out at Rukuhia behind the Aero Club hangar and I only saw it a couple of times during brief afternoon visits. Had I the foresight then, I would have nicked the SCR *522* four channel VHF out of it while the Flight Sergeant was trying to regain control of us elsewhere.

But the Army Cadets had everything. In a wooden hut behind the boy's toilets were stowed sufficient SMLE .303s to conquer the whole of Hamilton, .22s for the range, stretchers for the fallen and any amount of ground communication equipment. This was daily made obvious by students with glazed over eyes, wandering about the school grounds at lunchtime, continuously reporting "strength 5, clear" back to Base via the backpack '48s' they carried. These claims could be made immediately invalid, by sneaking up behind them and turning the battery switch off

'Base' consisted of a mysterious beast known as a ZCl and on looking in the hut door, one would see a couple of chaps bent over the thing and hotly breathing into the microphones that they too, were also in the "strength 5, clear" category. Such useful reports as to what the girls were wearing for their turn up at the swimming pool evidently did not occur to them. Possibly their military devotion tended to blot out all else.

And Valentines had ZC1s downtown in their Victoria Street shop that cost about as much as a new bicycle. They also smelt good and one was left wondering as to what all the dials and knobs meant. Even the Weekly News had pink back cover advertisements of them and Lamphouse was also trying to offload their stock on to the public. ZC1s evidently filled the country. Anyway, I popped off into the RNZAF at the end of 1949 and forgot all about them.

A later love for tramping in 1952 made me join Woodbourne's Mountain Rescue Squad, owned and operated by the Education Officer, Flt. Lt. Hildrithe. He skilfully manipulated Admin. and secured the Station's water tower as our headquarters. It was a bit like living in the Eddystone lighthouse, except the 'sea' was over your head, rather than down around the rocks below. But, just where you came in the door, I noticed two ZC1s with all their complex extras stacked against the wall. It took only a couple of minutes to convince the Education Officer that I wanted to operate one of these things and so was immediately signed up for the job.

On our first 'mountain exercise,' our truck terminated its obligations at a remote farm gate and I was dismayed to note that all my mates took off across the paddock and immediately tore up Mount Riley, leaving me to lug my 'portable' off to a small hillock that appealed to Mr Hildrithe. The other operator was ordered off around the corner somewhere and 20 minutes later he came on air and we got into the old "strength 5, clear" routine. If we only had the sense for one of us to have stayed back at Woodbourne, our results would have been far more informative. Or if an aircraft could have conveniently flown into Mount Riley on that Wednesday afternoon, we would have had our picture in the papers for heroic acts. But it was not to be and I went off to Ohakea.

A couple of years later, I moved on to Hobsonville and its Sunderland flying boats. I was

surprised to note that our reasonably high speed control boats were fitted out with ZC1's for air traffic purposes. And there was always a spare set that one would take along in the arming barge that was to convey the ancillary trades and their freshly serviced equipment downtown to TEAL at Mechanics Bay when a Sunderland was on a 'major.' This unit would mostly be used to transmit rude remarks back to Hobsonville as we proceeded down the estuary. It was interesting to note, that the ZC1 was incredibly reliable and the two man section responsible for their ongoing serviceability, could usually be found in the YMCA drinking endless cups of tea and reading the newspaper.

In civilian life, I was dispatched to Raoul Island in the Kermadecs during 1961. Sure enough, there was a ZC1 behind the OiC's office door. It was only operated during airdrops and as the boss was a 'teleg' from Musick Point, I was never allowed to use it and had to go off down the paddock and give my mates a hand to hoist the containers on to the truck. And Chatham Island was full of ZC1s when I was 'posted' there in 1963. There was a daily 'sked' at 0900 hours that the entire population of 500 attended and these machines would hit the airwaves full of complaints, lightly concealed scandal and descriptions of lost stock. The after-work public bar conversations in the Waitangi Hotel, relied entirely on these transmissions and distortion of facts would always arise.

On arrival at Campbell Island at the end of 1963, it was now quite obvious that there must be a ZC1 hanging around somewhere and sure enough, the tech had a beauty up there on his shelves. It never came down - not even for a dusting. For the Southern Ocean weather was not particularly suitable for taking the equipment out and into a picnic setting for an airdrop or for ship to shore prattle during the Operation Deepfreeze season. In the warmth of the tech. building, we would fire up the Collins and twiddle the Eddystone around to the necessary frequencies. During the latter part of the war years, the old coast watching station at Tucker Cove, just around the corner, also had a ZC1 for emergencies. There was a plan laid, that during an invasion, one would hot foot it up the hill for a couple of miles with the ZC1 to an ancient basalt cave and put out a plea for salvation on CW to Radio Awarua. The equipment would be of no noticeable burden to the runner whilst observing a Japanese cruiser over his shoulder as it entered Perseverance Harbour.

And then there was the one they had at Tekapo's Balmoral army camp. The boss at our pre-Antarctic course gathering, thought it might be a good idea to demonstrate to us how not to handle delicate and highly necessary communication equipment. But the CAA technician in attendance got an attack of stage fright when confronted by an audience of some 150, so disappeared before his act came on and knocked off a half bottle of whisky. Despite four inches of snow on the ground (it was part of a field exercise), he staggered back dressed up as Fred Dagg - that is, black singlet, dirty shorts and gumboots.

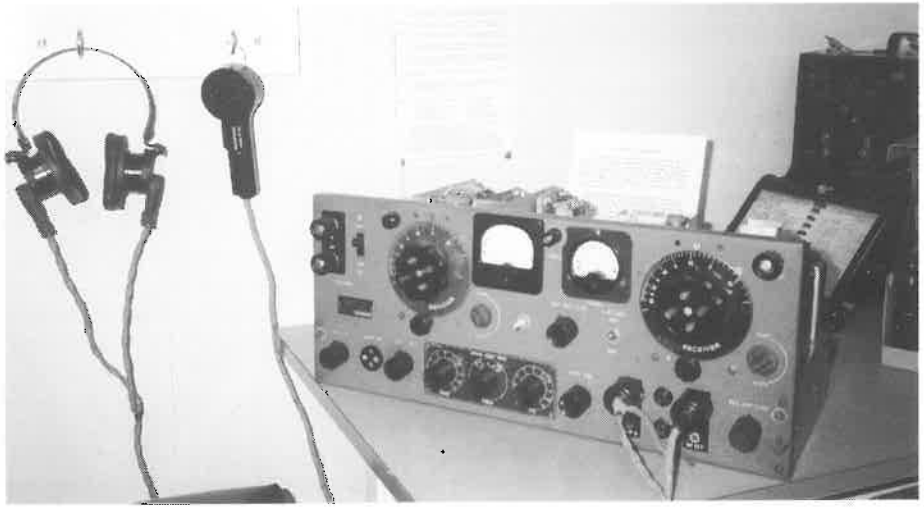
The first part of the act was a superb dropkick of the microphone into the crowd, to be followed by the most incredible knotage of the headset lead as he commenced his lecture in a rather basic and rude colonial tongue. Valves were removed, to be tapped with a tent peg so as to check their serviceability and absent minded high speed turning of any knob or tuning device accompanied the talk. In a grand finale, he tilted the table as if looking for something underneath and the entire unfortunate piece of equipment slid off and on to the rock hard ground so common to Tekapo.

So I naturally expected to see a vast network of ZCls throughout the Ross Sea Dependency

when I arrived in October of *1975*. But no. All there was at Victoria Land's Lake Vanda station was a dingy and uninteresting little 'solid state' Codan. Admittedly it would raise Scott Base "strength 5, clear" on most occasions, but it was not nearly as exciting as operating your own ZC1.

In fact, I never saw another ZC1 until a couple of months ago, when one became uncovered in the darkest and most secret corner of our Ferrymead Museum storage room. Rushing it into the light of day, I anxiously removed it from its case. Factory fresh, glittering and with that unique smell from 60 years ago was the welcome it bestowed. And so the memories came flooding back.

My thanks to Reg Motion, David Searle,, Roy Symon, John Nicholson and Chris Underwood for their help in providing the necessary information on the ZC1 for the Ferrymead display..



Mark 1 ZC1 on Display at Ferrymead

The ZC1 display surroundings.

On the shelf is an Eddystone 680S with a genuine Hikers One alongside of it and to the left of the ZC1 is 4YA's old record lathe, a BBC design with some Kiwi electrical additions. A BC221 frequency meter at the rear of the table

THE "SUPER WASP" SHORTWAVE RADIO.

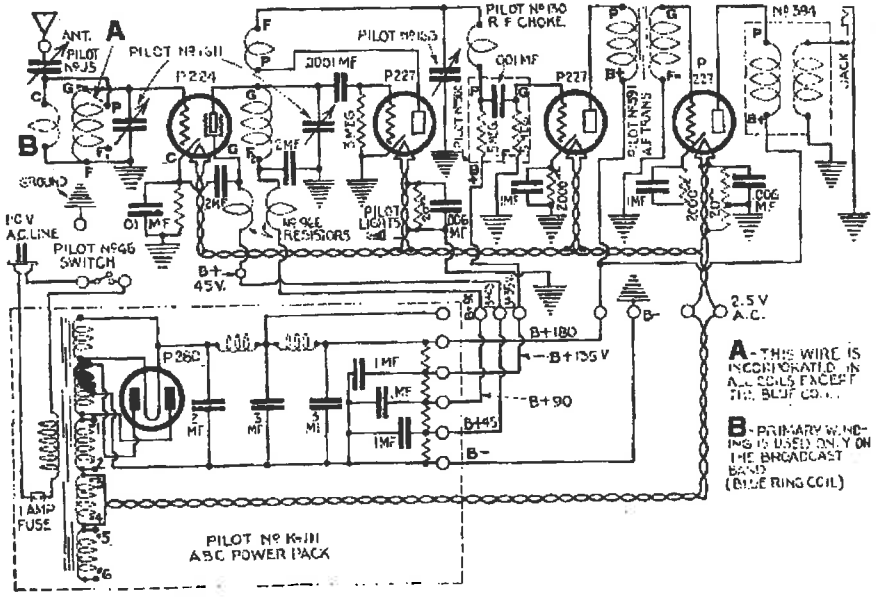
Dick Stevenson

Domestic broadcasting in the 1920's became very popular and in the United States for example, commercial stations sprang up in almost every town and it was not long before the medium wave band was almost full up. Meanwhile amateurs, who had been given wavelengths shorter than 200 metres, found that they could communicate over long distances and soon this fact was not lost on the broadcasters.

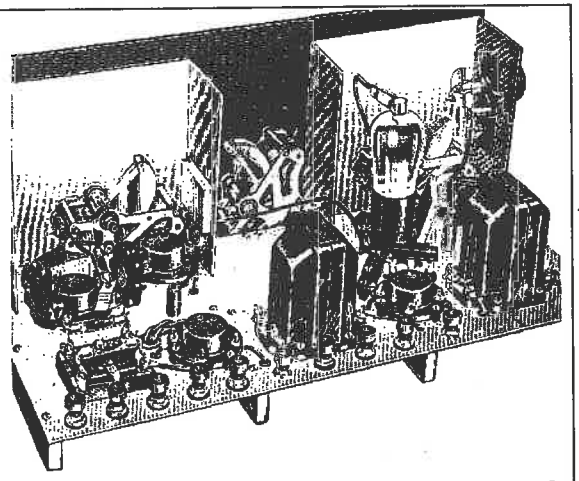
Most countries set up powerful shortwave broadcasting stations but amateurs found their activities severely curtailed. The Great Powers also discovered propaganda, which eventually reached a crescendo during World War II. Such broadcasts could be quite entertaining, if taken with considerable grains of salt. A new hobby arrived, DX listening, and exploring the shortwave band for exotic broadcasts became a craze.

Some listeners built shortwave converters, the simplest (for a TRF set) being a regenerative circuit that used a set's detector valve pulled out and put in the converter while power for filament and HT came from a plug replacing the valve. Any RF stages were not used. A more complicated device converted the shortwave bands to a medium wave frequency (often 1500 kHz), forming a type of superhet. with all stages in action.

Amateurs usually had to build a receiver suitable for their bands but more affluent listeners might have a separate shortwave set as a fashionable accessory and talking point. By the middle 1930's, problems with superhets, such as image suppression, a properly designed frequency changer and frequency stabilization, had been sorted out so the all-wave set appeared with an imposing dial, bandspread and a magic eye.



An example of an early successful shortwave set, sold either as a kitset or ready-assembled, was the Super Wasp, made by The Pilot Radio and Tube Corp. of Brooklyn N.Y. It used the recently introduced *2.5* volt AC heater valves, i.e. a 224 tetrode as a tuned RF stage, and three 227 triodes as a regenerative detector and AF stages. Speaker operation could achieved by further connection to an AF amplifier using perhaps a 247 pentode or two 245 triodes in push-pull. Audels Radiomans Guide (1932) featured this set and described the circuitry in detail.



Back view of Super-Wasp with coils, 3 valves and shields removed

It will be noted that although there was a tuned RF stage, a ganged variable capacitor was not used, so the unfortunate operator had to operate three controls more or less in step, two for tuning and one for regeneration. At the time, this arrangement was regarded as an advantage! Fears of AC hum were still not quite allayed so a specially made 227, the Pilotron P227 was used.

Early AC heaters were often just a single wire inside the cathode but the alternating field induced hum into the circuit. So the P227 had the heater bent into a hairpin shape to cancel the field. It was further discovered that the length of the heater and the small capacitance between heater and cathode generated high frequency oscillations which interfered with shortwave reception. In the Super Wasp, a centre-tapped 20 ohm resistor was connected across the heater with the tap earthed and a .006 mfd capacitor was joined between heater and earth. Later versions of AC valves were much improved in this respect.

The regeneration control was by means of a variable "throttle" capacitor and had the advantage that feedback was smoothly controlled instead of "plopping" suddenly into oscillation. It will also be noted that the power supply, using the venerable 280 double diode rectifier, was actually separate from the set but would have been an essential accessory. The then high gain of the tetrode RF stage was tamed by liberal RF chokes and comprehensive shielding.

The attention of the operator was further occupied by the use of plug-in coils which also used five-pin sockets like the valves. Broadcast stations could be picked up by using the appropriate coil.

The detector stage was a little unusual, with no primary winding on the coil but HT reached the RF stage through the secondary and was kept from the detector valve by the grid capacitor. The first AF stage was resistance-coupled which reduced the hum pickup found with the use of an AF transformer. The second AF stage had no problems with a transformer while output was apparently designed to match the high resistance headphones of the time.

What can I hear on my Set?

The following article was written by the famous Frank D Bell of Shag Valley, Otago for the NZ Wireless and Broadcasting News of March 10, 1923. It is reprinted here as it gives a very good idea of the radio world of that time. Considering the apparatus that was available the results are amazing - ED

The question which forms the heading of this article is rather more difficult to answer than many would believe, as so much depends on local conditions and on the efficiency of the particular receiver. However, the writer proposes to contribute some of his personal experiences and those of his friends in the hope that they will be of some practical use to other New Zealand amateurs, and in particular to beginners in the art, who have recently become the proud possessors of radio receiving sets.

First as regards crystal sets. Before the war we had one at this station which gave average results on 600 metres. We used a 4 wire "T" aerial 250 feet long, loose coupler, 4000 ohm phones, and various types of crystal and electrolytic detectors. Our favourite was zincite-bornite and with this we received all the New Zealand stations, Chatham Islands, Macquarrie Islands (now closed), a good many Australian stations, and of course ships working them. Nowadays, those crystal users situated within a mile or two of a broadcasting station can receive the music. In a few weeks several broadcasting stations will be employing half a kilowatt when the range to crystal sets should be increased to twenty miles or so.

Now as regards single valve receivers. It may be as well to remark here that with a valve employing a regenerative circuit nothing seems impossible. World record after world record has been put up in quick succession. American amateurs have been received in England on one valve and also in Samoa. A Timaru amateur is reported to have logged several amateur calls on the Pacific coast on his single valve set. On 600 metres Awarua operators have read low power spark sets in the United States, Canada, India, Japan, and even as far as Alexandria. Needless to say such results are exceptional and are probably well beyond the range of the average amateur. They are mentioned just to give an idea of the possible range of a super-sensitive single valve receiver in New Zealand. In practice a single hard valve may be expected to bring in most of the ships and shore traffic around Australasia . I say nothing of the concerts, as opinions differ so widely as to what constitutes good reception of speech and music. One amateur who has faintly received a somewhat mangled "carrier" showing symptoms of modulation while his valve was oscillating will deem it quite in order to dispatch an enthusiastic and totally misleading telegram to the transmitting station to the effect that the concert was received QSA all over the room - size of room not stated. I remember about eighteen months ago, when Dr Jack first commenced his telephony experiments on low power such telegrams used to arrive from all over New Zealand. They made me feel rather small as I often experienced the greatest difficulty in receiving the speech word perfect using three valves at a distance of only fifty miles from the transmitter!

With a good aerial very satisfactory long distance work can be done with one hard valve on long wave using a simple A.T.I. and tickler circuit. European stations come in best in Winter about dawn, while the American stations are usually plainest in the evening. Some of the stations read here, giving their calls and wavelengths may be of use. The wavelengths were measured some months ago and some may have changed since. The stations are given roughly in order of loudness.

LY Bordeaux 23,450; KGI Kahuku 16,400 and KIE Kahuku 17,500; PKX Bandoeng, Java, 16,200 and 8,600; NPN Guam 9,200 and 6,800; NPM Pearl Harbour 11,200 and 8,250; UFT St Assise 14,500; the American Transatlantic Stations WSO, WII, WQK, WQL, WGG, NSS; IDO Rome 10,500; SUC Cairo 10,800; OUI Eilvese 14,400 and 9,600 and many more.

With the addition of one note magnifier we get such stations as BYZ Malta 4,200; FL Eiffel Tower 7,500; ICD Centocelli, Rome 5,500; LP Konigs-wusterhausen 5,250. With two note magnifiers we have read OSM Constantinople 8,000; OHD Vienna 4,400; GBL Leafield 8,500; BUC Bucharest 7,800; FUT Toulon 5,900; ICI Coltano 5,250. All these are CW stations and it is only fair to state that nearly all of them have been read on a single valve in New Zealand, but not at this station.

To return to short waves. I cannot claim to have achieved any sensational results using a single valve. Possibly this is because I have always used hard valves. I generally use two stages of tuned high frequency amplification, detector and two note magnifiers - five valves in all. Even so I have never approached the results achieved by the Awarua operators with their single valve. On 600 metres KHK and NPM Honolulu come in plainly on true note, during pauses in the jamming and KPH San Francisco, VPS Hongkong and JCS Chosi, Japan have all been heard clearly. VPS has a very high Telefunken note, KPH and KHK (rotary gaps) have rather low musical notes and NPN has a note like Brisbane. My friend Mr R J Orbell has heard these stations on three valves and also KFS, another 'Frisco station and NPL San Diego.

New Zealand concerts come in well on our set here, and telephony has been received satisfactorily from Melbourne, although the speech was not very clear. It is on telephony in particular that the high frequency amplification is so useful - in fact, it is an absolute necessity for distant concerts and in a lesser degree for picking up faint spark stations on true note. For CW on the other hand the multiplicity of controls is a disadvantage which often makes it difficult to pick up a station unless one knows the exact wave on which to listen.

While listening for a concert on 365T on January 27th last we heard what we took to be an American amateur at work. One call received was 6ZG which corresponds to Mr Forbes Van Why of Los Angeles, California whose allotted wavelength , according to the "Radio Call Book" is 375 Meters. We heard some others but could not get their calls owing to spark jamming. 6ZG was readable three feet from the telephones using six valves. The following night 6ZR was heard, listed as Mr Paul Berringer, Los Angeles. From the fact that all these were expert operators, that they were obviously different transmitters (two used tonic trains of different pitch and all being on slightly different waves), and from the character of the messages, we felt pretty certain of their identity. At the time we were unaware that anyone else had received American Amateurs in New Zealand, but have since heard of three other experimenters who have achieved much better results than we.

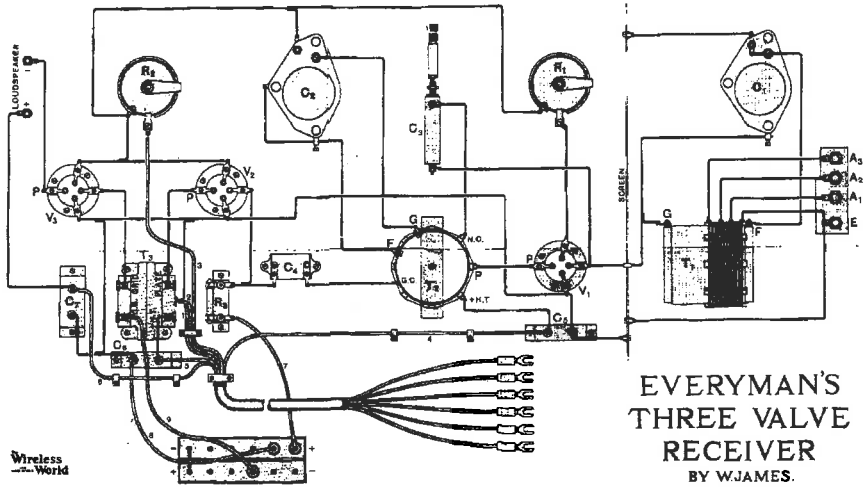
Several faint phone sets have been heard lately on 360 metres generally stopping about 8 to 8.30pm. I have been unable to discover their origin. Probably other amateurs have been more successful. One of them might be the Honolulu set which used to broadcast on this wave. At any rate there is a promising field for investigation in the regions around 200 to 370 metres. The Australian amateurs are arranging a test with the Americans commencing May 1st next and it behoves us to get in ahead of our Aussie friends if possible.

A word as to the receiving valves before closing. The writer has tried about a dozen different makes of hard valves and so far the best all-round performer has undoubtedly been the Gamage K valve.. However I do not

think they are obtainable in New Zealand. The V24, I have found a fair detector and an excellent high frequency amplifier with some 40 to 100 volts HT. Q valves are good detectors, but require a potentiometer, and for amplification require more HT than the average Amateur can afford. Moreover, mine always had a short life, so they are not recommended. They are supposed to be useful as transmitters but personally I have found them very inferior.

For low frequency amplification I have never found anything to beat a good make of French valve. They have a long life and are to be recommended in every way. They are obtainable for 22s 6d and are well worth the money. As transmitters they will handle 5 watts comfortably and two of them will radiate 0.75 Amperes in an average aerial. Of course their life under these conditions is considerably foreshortened. The Marconi R and BR valves are very similar to the French but are more expensive, and soon "blow" if used for transmitting. Ora valves are perhaps the best obtainable out here for all-round work. They are fair detectors and high frequency amplifiers but seem inferior to French valves as note magnifiers. They give satisfactory results with a plate potential of about 30 volts but work better at about 50 for rectification and 80 or more when used as high frequency amplifiers. They are obtainable for one pound in Dunedin.

I know very little about American valves as I have made the "R" socket standard in my set. However, I believe they are equal to and probably more efficient than the British type. The soft Radiotron, Cunningham and De Forest detectors give wonderful results on faint signals and of course are much more sensitive than the average hard valve. However the prices for both valves and sockets are high and the adjustment of battery voltages are so critical that many prefer to use two "Ora's" in place of one super-sensitive American. The "Expanse B" is another soft valve which gives excellent results as a detector. It has the advantage of having two filaments therefore two "Lives". Against this may be set critical working, high price and a special mounting.



EVERYMAN'S THREE VALVE RECEIVER
BY W.JAMES.

HOW THIS FOR A CONSTRUCTIONAL DIAGRAM?
With acknowledgment to the Wireless World of November 3, 1926

HISTORY OF THE AUSTRALASIAN 3 PIN PLUG

Part 6

Murray Stevenson

Countries other than New.Zealand, Australia and Britain made the Australasian 3 pin plug.

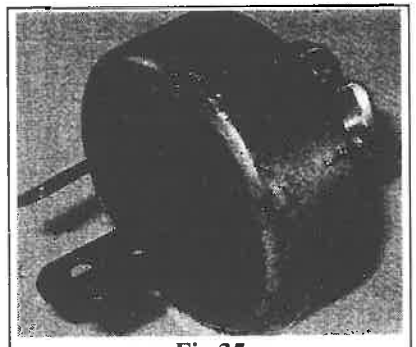


Fig 35

USA, the original home of the 3 pin 'crows foot' plug made many. HUBBELL made a top entry, open terminal plug, metal cased with external metal cord-grip that was patented in 1929 (Fig 35). There was a push-on fibre cover over the terminals. Later models, probably made in the 1980's, were identical except that there was a metal connecting strip bonding the earth pin to the metal case.. HUBBELL also made an identical plug except that it was not metal cased; it had the same cord-grip which was riveted onto a composition body rather than being integral with the metal case

. Fig 36 shows a HUBBELL top entry rubber covered plug. The rubber cover is stretched over a nylon base to which the pins are secured. There is a metal clamp around the rubber cover where the cord enters which acts as a cord grip. Not a good idea, in the writer's opinion, as a good tug could pull the cover off and expose the terminals! As the base is nylon the plug would be of recent manufacture.

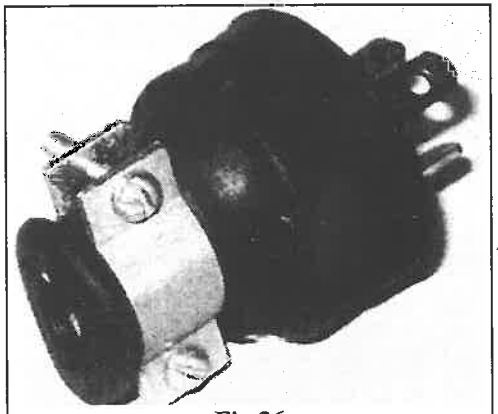


Fig 36

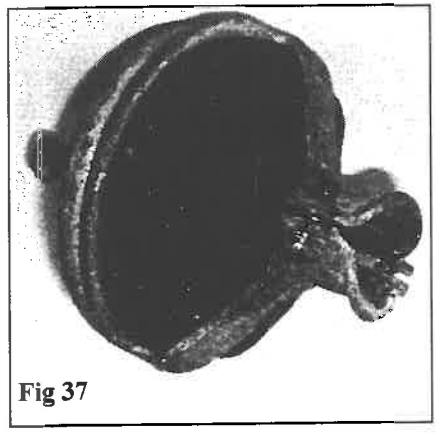


Fig 37

Fig 37 is an ARROW plug shown in a 1930 G.E. catalogue as been made of Textolite. It is a one piece open terminal type with a ridged metal band around the outside circumference of the plug; this band has two opposite integral pieces that stretch across the back and are bent to form over the cord entry a metal cord clamp. In it's day this would have been a good plug, the metal band around it protecting the Textolite from damage when dropped and the cord-grip strong and positive.

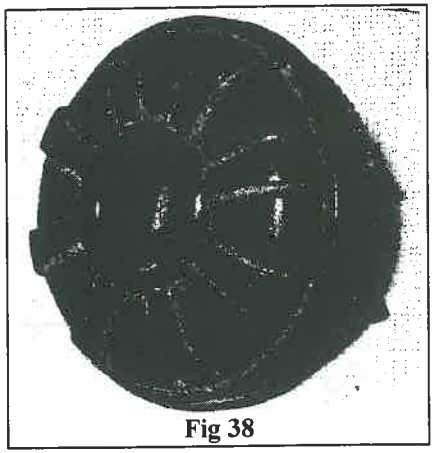


Fig 38

Fig 38 is a G.E. one piece open terminal Bakelite plug circa 1931/2. Like many one piece plugs with flat pins made over many years, by many makers, the pins are bent at 90 degrees at the body end forming a flat part which had 2 holes in it, one hole for the terminal screw and the other for the screw, or rivet, which fastened the pin to the body. USA made plugs all use National Coarse threads

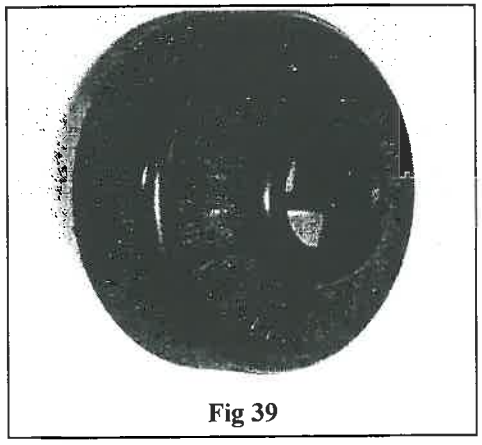


Fig 39

Fig 39 is a HUBBELL Bakelite one-piece top entry open terminal type - there is no cord-grip or tortuous path for the wires - it would date, I would think, from the early 1930's.

CANADA made 3-pin plugs; an example is Fig 40, a FEDERAL. It is a top-entry, open terminal covered with a fibre disc all hard rubber type, with a tortuous path for the wires. The hard rubber has started to perish. The construction of the second type REIDRUBBER plug is similar.(see article 4). USA and Canadian plug pins all have holes in them near the tips. This is because the socket contact springs have, in many cases, 'pimples' on them to latch into the pin hole.

Fig 40

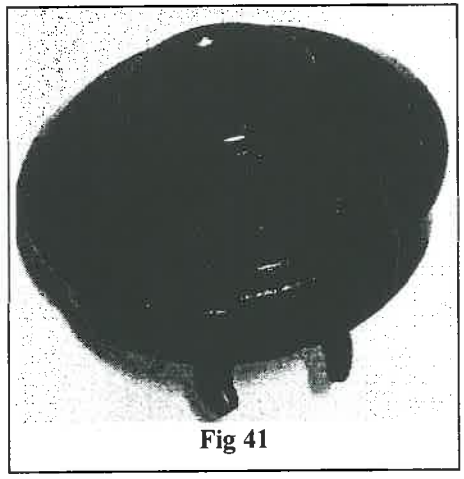


Fig 41

JAPAN also has made 3-pin plugs. Fig 41 shows a pre war, one piece. Bakelite, top entry, open terminal type. It is solid and well made, but unfortunately, does not comply.

Fig 42 shows a similar plug with a compression gland type cord-grip.The screw threads appear to be UNC.

After the war, circa 1956/65? there were a number of Japanese sewing machines imported with their O.E. 3-pin plugs, Fig 43. They were one piece, top entry, Bakelite-usually coloured black or green. Their open terminals were sometimes covered by a fibre disc occasionally secured by small screws. The screws were metric and there was no cord-grip: a VERY poor plug!

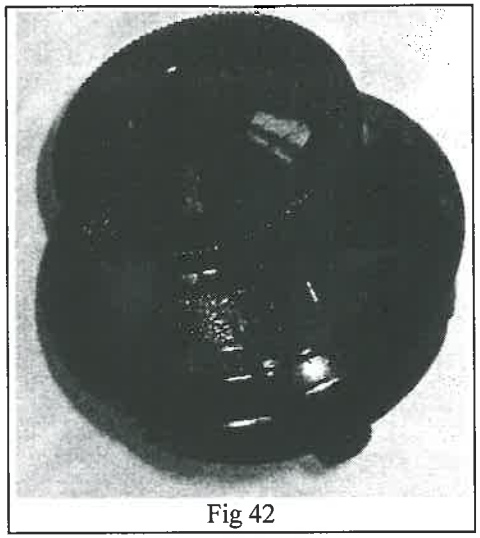


Fig 42

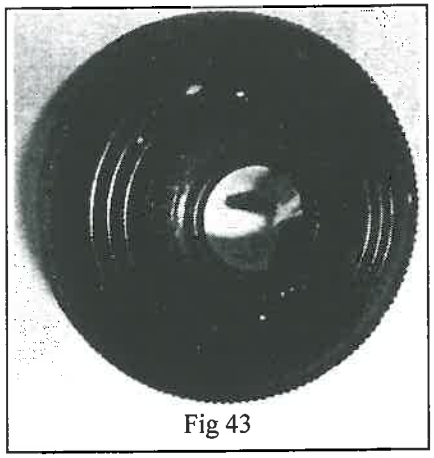


Fig 43

There are two other Japanese plugs that I have seen; one is similar to the G+R top entry and the other similar to the TILLEY. They, as well as the sewing machine plugs use metric thread screws for the terminals and covers, where fitted. Over the years there have been many plugs from various countries that seem to be copies and in most cases it is impossible to say which is the original and which is the copy.

Other Australian plugs I have seen are ELMACO and RING-GRIP.

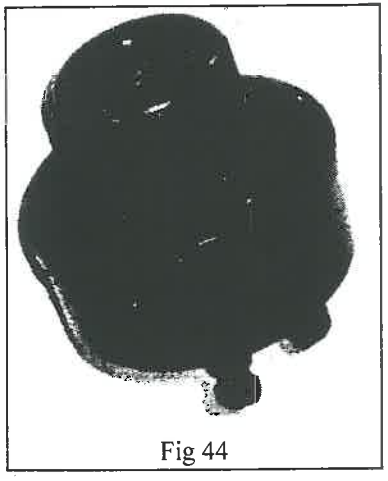


Fig 44

The name ELMACO has disappeared having been taken over by Ampere Ltd. The ELMACO plugs I know of are: (I) A plastic type almost identical to the HPM; Fig 5 in Part 4. (2) A rubber cover type similar to the HPM; Fig I2 in Part 4. (3) A two piece top entry type almost identical in construction of body and terminals/pins as the N.Z. KAYGEE Part 4, except that the body is made of Bakelite, not nylon. ELMACO also made sockets, double-adapters etc.

RING-GRIP was originally incorporated in the 1920's. The two Founders were Mr. Cook and Mr. Williams.. The earliest RING-GRIP plug I have seen is a Bakelite top-entry open terminal type with a compression gland type cord-grip. The pins have nicks in their edges, Fig 44.

Although, at first glance this appears to be a one-piece plug, if all the terminal screws are removed the whole plug parts into four Bakelite pieces (not counting the cord-grip), and is tricky to re-assemble. 1 can only assume that with the facilities available at the time (probably the late 1920's) this was the best way to mould a 3-pin plug. If any reader can enlighten me on this, Please do.

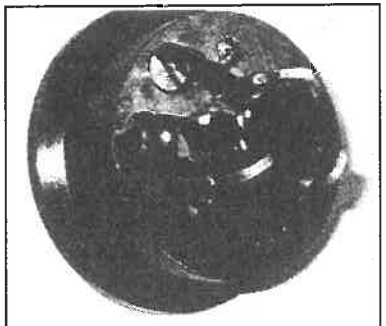
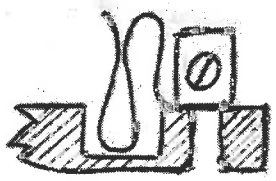


Fig 45

Fig 46

Fig 45 shows another RING-GRIP plug and Fig 46 a surface socket. These were both designed at the same time as matching units (this was not unusual, GEC did the same in the 1930's.) Frederick Leonard Cook was the inventor and as far as the plug is concerned this is a two piece top entry plug, the top cover of which covers the terminals. The flexible cord enters the plug and goes right through to the bottom where the conductors are separated into individual grooves and are doubled back through holes into the terminals of the pins. This was part of the patent. By looking at the bottom of the plug one can see the wires and ascertain that they are connected to the correct pin. The conductor is secured under the head of the same BSW screw that fastens the pin.

The patent, 5341 (Ref 15), was applied for on 11th December 1931 and was provisionally accepted 24 December 1931,(a good Xmas present). This patent applied to the socket as well. It is interesting to note that the first of these plugs had nicks in the edges of all the pins, the RING-GRIP name upside down and Pats Pending inside the lid, next there were only nicks in the conducting pins and Pat534l/31 inside the lid. Lastly, there were no nicks in any pin, the RING-GRIP name was 'right way' up and there was no patent notice on any part of the plug. It must have been in production for many years.



The same patent applied to the socket as well and was mainly to do with the pin contact which was a strip of phosphor bronze shaped a bit like a squashed 'S'(see sketch). Other manufactures have copied this. Later RING-GRIP made other plugs, examples; cat X53, a Bakelite type with the same tortuous path for the conductors but with riveted in pins and the terminal screws threaded into them, also, a plug that looks much like a Tilley, made out of nylon with 3 attached tapered wedges in the cord entry which compress as the cover is tightened down.

RING-GRIP also made switches, lamp-holders etc., and over the last 80 years has had several owners. Since July 1988 Gerard Industries (CLIPSAL) have been the owner. Ref 16

MOULDED PLUGS.

Most of the 'plug in' electrical equipment on the market today comes complete with a 'moulded onto cord' 3-pin plug. Equipment made in Australasia with moulded plugs will have the plug pins made by UTILUX PTY. Ltd, whose name until circa 1952/54 was J.J.HOELLE. TYCO ELECTRONICS now own UTILUX. CAMELEC in South. Australia was probably UTILUX's first moulded plug pin customer. There was some resistance obtaining approval for moulded on plugs.(The writer remembers when crimp terminals first came to N.Z; the method was initially looked upon with disfavour as poor and unreliable, whereas now it is the preferred method in many situations). Other UTILUX customers over the years were Burton Electrical, Peston, Simpson, Sunbeam, Cablemakers, Email, Kambrook, Allied Industries, PDL, Fisher & Paykel and H.C.Urlwin (TITEGRIP). Pins and machines were supplied to Hong Kong, USA, and other overseas countries. The UTILUX pins were originally two parts crimped together but circa 1955/60 a one piece folded stamping was introduced. The NZVRS cord-sets with moulded plugs have UTILUX pins. Note: UTILUX only supplies the pins and fastening machinery, they do not make plugs. (In everyday use these moulded-on plugs seem robust and reliable.-Writer).

Over-seas, other manufactures welded the conductors onto the solid pins they used. Initially there were problems, and this is one reason UTILUX developed their folded pins with crimped connection. I thank Mr. Les Moren for all the foregoing information. Les retired from UTILUX in 1988 after 48½ years service in various positions in the Company. Some manufactures of double-insulated equipment fit moulded plugs with only 2 pins, they leave the earth pin out as it is not electrically required. The Writer does not like this idea, because (1) The earth pin helps to locate the plug when inserting, (2) The earth pin helps hold the plug in place. (3) Some sockets have a safety interlock which is actuated by the earth pin (to overcome this problem some sockets have the safety interlock actuated by the neutral pin).

INFORMATION REQUIRED

Fig 47

Fig 48

Fig 49

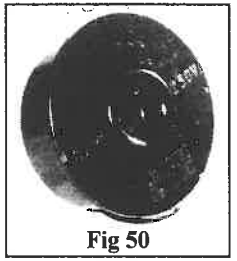


Fig 50

The author would like to obtain information on the following.
Fig 47, a ROBAT plug, Fig 48, a LOCKTITE plug and Fig 49, a one piece, open terminal, top entry plug. The latter has ~C' in a circle on it, the early ones had nicks in the conducting pins, the later ones had no nicks and cat.39 on them. They seem to have been used exclusively by Radio(1936) Ltd. from the 1940's through to at least 1953. Fig 50 shows a 2 piece top entry plug with GR NZ RG on the top, the pins each having a hole in them.
Contact me by phone 09-8133565 or write me care of the Secretary NZVRS inc. if you can help.

References:- Ref 15 Photo copy of patent application. Ref 16 Letter from Mistral. (Part of Gerard Industries Group.)

Imdex to model numbers of radios made by COLLIER AND BEALE LTD

compiled by John Stokes

Model	Date	Valves	Remarks
Radion	1932	6	Superhet
Cromwell	1933	5	Chest cabinet
State	1933	6	Large chest
Radion	1933	5	"Little Aristocrat"
S2	1938	5	Stella
S3	1939	6	DW Stella
S16	1940	5	Stella portable
5AV	1935	5	Radion
5AV	1933	5	Radion "Compact"
5AV3	1936	5	"Compact" aero dial
5MO	1940	5	Pacemaker
6AW	1935	6	AW
6DW	1935	6	DW
6CV	1938	6	AC/vibrator
S1	1938	6	AC/vib. Stella
?	1936	4	"Parliament"
?	1935	4	S/W converter
6LS	1934	6	DW Series 1,2.5 V.
6LS	1935	6	DW Series 2,6.3 valves
6LSE	1940	6	DW, Has magic eye
7AW	1936	7+	AW series 1 uses 6A8
7AW	1937	7+	AW Series 2 uses 6L7
9LS	1935	9	DW vari. selectivity
52VG	1935	5	DW vibrator set
397	1939	6+	AW
515D	1945	5	Pacemaker
516	1946	5	Pacemaker
517AB	1947	5	AC/Batt portable
517V	1947	5	Vibrator set
518AD	1949	5	AC/DC Pacemaker
518N	1949	5	"Little Jewel"
518P	1949	5	
518V	1949	5	Vibrator set
519AB	1950	5	AC/Batt portable
519P	1949	5	Bakelite cabinet
526	1946	5	DW
529P	1951	5	DW
549AB	1950	5	AC/Batt portable
617P	1947	6	has loop aerial
617R	1948	6	miniature valves
617RG	1948	6	gram
618P	1948	6	
619P	1950	6	
620	1941	6	DW
628	1949	5+	DW
722	1942	6+	DW
726	1946	6+	DW
727	1947	6+	DW miniature valves
729	1950	6+	
755	1933	7	has NSC circuit
755	1955	6+	BS post-war
756	1956	6+	BS uses PM speaker
830	1940	7+	AW
839	1950	7+	AW
941SWB	1941	9	special, for P&T
951	1941	8+	BS
4153	1953	4	uses rimlock valves
4154	1954	4	uses rimlock valves
5150	1952	5	AC/Batt portable
5151	1952	5	Bakelite cabinet
5151RG	1954	5	tablegram
5152	1952	5	
5153	1953	5	
5153AB	1953	5	AC/Batt portable
5155	1955		
5155AB	1955	5	AC/Batt portable
5251	1952	5	DW
6150	1952	6	
6152	1952	6	Bakelite 3 colours
6153	1953	6	
6154	1954	6	car radio
6250E	1951	5+	DW
6251E	1952	5+	DW
6253	1954	6	DW
6253RG	1954	6	DW radiogram
7150A	1952	7	dual-voltage car radio
7150E	1952	6+	
7253	1954	7	DW
1029V	1952	9+	DW vibrator set
1039	1950	9+	AW
1139	1950	10+	AW radiogram
10351	1952	9+	AW
11351	1952	10+	AW gram, pre-amp
11352	1953	10+	AW gram, pre-amp
11355E	1955	10+	AW gram, pre-amp
Atlanta	1957	5+	AW Bakelite cab.
Berkeley	1963	6	last valve set
Bismarck	1960	5	
Bonavista	1960	5+	uses EM80 eye
Brentwood	1957	5	
Boston	1957	5	
Brocton	1957	5	
Brooklyn	1957	5	

Model	Date	Valves	Remarks
Broadway	1957	5	tablegram
Breton	1957	6	
Bresden	1957	6	DW
Bristol	1958	6	
Granada	1958	6	
Pageant	1958	6	
Brydon	1960	5	
Symphonic	1960	5	
Byron	1956	6	(also 6255)
Buffalo	1958	5	plastic cabinet
Burbank	1957	6	(also 6154E)
Dakota	1960	5+	DW
Denver	1958	6	DW
Drayton	1958	7	has preamp
Dresden	1958	6	DW
Drummond	1958	6	DW
Drifton	1959	7+	DW stereogram
Patina	1962	7	BC stereogram

Model	Date	Transistors	Remarks
Bermuda	1959	6	
Bondi	1958	7	
Georgia	1957	4	Record player
Sportable	1960	6	Solid leather
Telstar	1969	5	AC mains only
Transportable	1957	8	first model
Transportable	1958	7	second model
Transportable	1963	7	third model
Transportable	1964	7	fourth model
TR610	1960	6	SONY PACEMAKER pocket model
Tr819	1965	8	SONY PACEMAKER dual wave
TR6080	1963	6	SONY PACEMAKER five colours
Tr6081	1965	6	SONY PACEMAKER five colours
TR7121	1962	7	SONY PACEMAKER

NOTES.

Where a "+"' sign follows the number of valves, thus: 6+, it indicates that a magic eye tuning indicator is used.
Unless otherwise stated, all models have broadcast (BC) coverage only; AW= all wave. DW= dual wave BS= bandspread.
The year dates listed above are actually the dates of printing of the manufacturer's service data sheets; in most cases receivers were released prior to the dates shown.
The model numbers incorporated a date coding indicating the year of manufacture as explained below.

MODEL NUMBERING SYSTEM

Prior to 1940 no standardised system of encoding details of a particular model in its model number was employed. In any case, receivers made prior to about 1934 apparently were not assigned model numbers. Commencing in 1940 a three figure model numbering system came into use in which the first numeral indicated the number of valves, the second numeral indicated the number of bands and third numeral the year of manufacture, thus- 726=7V,2b, 1946. With the start of a new decade in 1950 an additional numeral was required to indicate the year of issue, thus 5151 = 5 -valves, 1 band, 1951. This system remained in use until 1957 when model names replaced model numbers.

WAIKATO BRANCH CHRISTMAS MEETING

Tauranga, 23 & 24 November 2002

Donella Baker

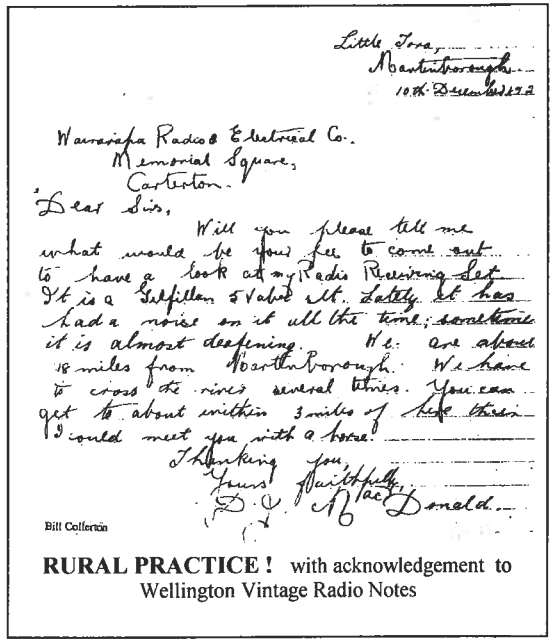
On a lovely sunny Saturday afternoon the Tauranga NZVRS members welcomed Graeme & Sheena Lea from New Plymouth, Tom & Jenny Spackman from Hamilton, Peter & Anne Anderson from Waihi, Gerry Billman, David Crozier, Ernie Hakanson & Wayne Griffin from Auckland at John & Margaret Collins home in Judea. Here, the men all disappeared into John's shed to view his collection and catch up with other members from out of town. The ladies all had a good gossip and laugh and enjoyed a welcome afternoon tea.

It was then off to Damien Jurgens home in Welcome Bay. Here Damien proudly showed his home made Amplifier and of course it had to be "tested", and I am sure it passed with flying colours. Damien also had some very nice unusual Radios that he had restored

That night we were joined at the Bureta Hotel by Barbara & Les Cole from Hamilton also Paul and Carole Jenner from Katikati. We had a lovely meal there and a good catch up with all the Radio members.

Sunday we woke to RAIN but by the time we had arrived at Sue & Rod Osborne's home in Welcome Bay for morning tea the sun was shining. Rod had some goodies outside for the members to barter over and by the trading some went away happy.

Lunch was at Donella & Gordon's home in Otumoetai where the Barbeque was running. This was going very well until Damien arrived. He decided that we need some more fire but thankfully this year there was no BURNT FOOD! Gordon had his Communication Receivers all displayed in his new shelving unit. These were greatly admired by all the members. He also had his K9AY loop antenna finally up and running.



Little Tora,
Manutaroroughs
10th December 1922

Wairarapa Radio & Electrical Co.
Memorial Square,
Carterton.

Dear Sirs,

Will you please tell me what would be your fee to come out to have a look at my Radio Receiving Set. It is a Telefillen 5 Valve set. Lately it has had a noise on it all the time; sometimes it is almost deafening. We are about 18 miles from Manutaroroughs. We have to cross the river several times. You can get to about within 3 miles of here then I could meet you with a horse.

Thanking you,
Yours faithfully,
D. G. McDonald.

Bill Cafferata

RURAL PRACTICE ! with acknowledgement to Wellington Vintage Radio Notes

After lunch we all went around the corner to Rose & Reg Motion's home. Here Reg demonstrated methods of testing amplifier linearity and conducted a garage sale of radios and other items largely from a deceased estate. After a very nice afternoon tea visitors all left for their homes.

It was a very nice weekend but a pity that not more members could come to view some of the great collections in Tauranga as some member's here have collected some very nice bits and pieces. If you are passing through Tauranga members would love to see you.

TARANAKI VINTAGE WIRELESS GROUP

October Meeting

This meet was held at the home of Sam & Suzie Lowe.

The topic for the day was the repair of Bakelite and Plastic Radio Cabinets. Sam gave a very practical and entertaining demonstration of his method of rebuilding these cabinets. One cabinet had a large piece broken out, (never to be seen again). The secret was in the fitting of a thin sheet of aluminium under the broken section. Not only was he able to effect the repair, it was difficult to see where it had been done.

Though some preparation had been done, Sam really completed four cabinets in less than two hours. When the repairs are completed the cabinets do need to be spray painted in the original colour.

This was followed by afternoon tea with the Ladies. It was suggested by the ladies that they bring an item of interest if they want to, one they have purchased recently or have in their collections at home or just something that they feel would be of interest to others. Not to be outdone by the men, the ladies collect a large range of things including Blue and White china, records 78rpm, 45rpm and LP's, Clarice Cliff, Crown Lyn china, Xmas Bears, Pens, Egyptian perfume bottles, Carnival Glass, Bayreuth & Royal Albert china; to mention just a few!

TARANAKI OPEN WEEKEND 2003.

Following the success of our Open Weekend held last year, we have opted to do it again this year.

Last year we met at Bill and Pats place. To start the ball rolling, this year we will meet in Stratford at the Pioneer village about 10.OOam on Saturday. Those that want a quick look inside and a cuppa you will have time.(cost to enter the village $6.00 approx.) The cafeteria is outside the complex. Next stop Brian and SueTipler' 5 for a look at Brian's treasures which will take a while. Lunch will be at Brian and Sue's. Afternoon activity to be finalised.

Saturday night tea at Graeme & Sheena's. We will have the opportunity of visiting a privately owned theatre to see some old movies in New Plymouth. Entry fee at this venue will be a gold coin.

Sunday morning a visit to Sam & Suzy's finishing at Bill & Pat's for lunch.

Remember to register early and your partners are most welcome to attend as this is friendly Taranaki. (you may even get to see Tom Cruise!)

Details as follows:-	Date *22/23* Feburary 2003 Accommodation your care.
Registrations to Bill	Bill Campbell Phone 06.753.2475 or Graeme Lea Phone 06.758.5344

To keep costs down a gold coin donation would be appreciated at the main meal venues.

LETTERS TO THE EDITOR

2KO Newcastle

I am putting together a technical history of 2KO Newcastle. My father was the original CE when the station was licensed in 1931 and had 30+ years with it. I worked there for a few years in the mid 60s .

Fortunately my father and one of the techs kept some early photos and the station managed to keep some of the scrap books from 1937/38. I have scanned as much as I could about the technical side of things and put it together in Power Point, copied to the station and the local library.

I have been trying to get a photo, at least, of an EMI BTR1 tape recorder which they were still using in the 60s. I can be reached at: <atholg@ozernail.com.au> or mail to Athol Greenhalgh, 19 Mundara Pl, Narraweena, NSW 2099.

Airborne Radio/Radar Equipment

Alan Hawker suggested I should contact you - I am looking for airborne radio/radar equipment up to the 1950s, partly to fill gaps in my own collection (of which there are embarrassingly many) and partly to help others to restore military aircraft to either static or operational condition, which I have been doing for many years,

I'm particularly looking for the early ASV, H2S, ECM and ferret gear, but almost anything would find a good home.

Any such help would be greatly appreciated.

Charles Darby, <xtr126948@xtra.co.nz>

Re "Aligning MF Receivers".

There's always someone in the NZVRS that improves my fully reasoned, researched and logical article with annoying facts!!

Gerry Billman

Collecting

Fellow members - be very thankful for members who hoard and cram every available space with old chassis, radio parts and bits and pieces. Without them doing that many things would be lost forever and that prized radio may not be able to be put back into original order.

Murray Stevenson

Some of the goodies at Mark Thompson's garage sale (Nth Shore, Auckland).

Photo by Ian Sangster

Basketball team sponsored by WESTCO PRODUCTS, Auckland, in the Friday Night League
Played 22 games and won 14 to make them runners up in 1949
Back row: C Maxwell, J Bayliss, S Bezzant, T McFarland. Middle row: R Hanham, L Biddle, R Frank (coach); Front row: H Johnson (Manager), O Kendall (Capt.), A Chadwick (Patron)

NOTICES

ANNUAL GENERAL MEETING Our AGM this year will be held on Easter Saturday, 19th April at the Horticultural Society Hall, 990 Great North Rd. (opposite Motions Rd.) in Auckland.

Trading tables from 10 am.

AGM starts at 1 pm

Evening activities are yet to be determined.

"Tube Testers and Classic Electronic Test Gear". We have jusr received a very limited quantity of this book by Alan Douglas. It is available to members at $50 plus $5 p&p. Cheques to our Treasurer, David Crozier, 154 Grey St, Onehunga, Auckland.

Te Puke Amateur Radio Club will be holding a sale of radio goodies on March 1st , 2003.
Venue Paengaroa Community Hall, (Paengaroa is situated on State Highway 33, approximately 10 km South of Te Puke.)
Time Sale starts at 10am.
Further information can be obtained from Syd Rowe, 07-5331029. <syd.rowe@value.net.nz>

FROM THE LIBRARY

The following are title and key points from articles published in other vintage radio magazines received by the NZVRS Library. Photocopies of these articles are available at $1 each from our Librarian, Ernie Hakanson, 17 Williamson Ave, Grey Lynn, Auckland. Ph 09-3766059

607 The Eddystone EY11 Receiver. History, Photos. Radio Bygones no 75 Feb/Mar 2002, p9

608 The Saving of a Pye Fenman. photos, circuit, Alighnment. Radio Bygones no 75 Feb/Mar 2002, p12

609 The Crosley Auto Expressionator and Phantom Conductor. Description with diagrams of a volume expander used in some Crosley radios of the 1930s. Michigan Antique Radio Chronicle, Vol 16/4, Dec 2001, p10

610 Restoring a Classic Meter, Simpson model 260. Photos, description of restoration. Canadian Vintage Radios Jan/Feb 2002, p4

611 Visit of US loudspeaker designer Jensen to Radio Corp of NZ. Design of range of EM speakers and production of Models 34 and 61. Circuit of model 61. Wellington Vintage Radio Notes, Feb 2002, p4

612 Discatron Record Player Service Manual. Reprint of this manual. Wellington Vintage Radio Notes, Feb 2002, p6

613 Marconi Crystal Receiver No. 16. Photo, circuit , history. Wellington Vintage Radio Notes, Mar 2002, p3

614 Tasma model 1001. Photos, description, circuit diagram. HRSA Radio Waves, Jan 2002, p4

615 The Coastwatchers Portable Set - the RC16B/ATR 4A. Photos, description, circuit. HRSA Radio Waves, Jan 2002, p10

616 The AWA Pressmatic model 690MA Radio. Photo, circuit diagram, description, alignment table. HRSA Radio Waves, Jan 2002, p20

617 Early Experiments Developing Radio Communications for the Flying Doctor Service. history, photos, circuit diagrams. HRSA Radio Waves, Jan 2002, p23

618 Australian Army Wireless sets 108 and 208. Photos, diagrams, circuits, descriptions. HRSA Radio Waves, Jan 2002, p29

619 Restoring a GEC BC4850. Photos, description of restoration. British Vintage Wireless Society Bulletin. 27/1 Spring 2002. p10

620 Another look at Refinishing Radio Cabinets. Detailed description of authors methods and materials used. British Vintage Wireless Society Bulletin. 27/1 Spring 2002. p12

621 An Invisible Eliminator. "B" and "C" battery eliminator which fits into plinth under 1920s battery sets. photos, circuit, description. British Vintage Wireless Society Bulletin. 27/1 Spring 2002. p34

622. The 1937 National NC-81X. History, photos, circuit diagram, restoration, performance. Old Timers Bulletin Vol 43/2, May 2002, p17

623 Asbestos Exposure and Radio Collecting. In American compact radios of them 193/40 era - e.g. Zenith 5-S-319. Old Timers Bulletin Vol 43/2, May 2002, p38

624. Overhauling the Pye 39J/H: Table Radio. photos, circuit, alignment, Radio Bygones No 76, April/May 2002, p3

625 Rugby Radio Station. History, photos, details of the 500kW, 16kHz transmitter and its aerial also GBT (60kHz), GBY (68kHz) and (MSF on100kHz). , Radio Bygones No 76, April/May 2002, p14.

MARKETPLACE

Advertisements for the next issue must reach the editor by the 12th April 2003. Ads must be either hand printed, typed on a separate page or emailed. No verbal or phone ads. 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 Reg Motion, 2A Hazel Terrace, Tauranga, New Zealand or email regmotion@xtra.co.nz

AVAILABLE

Two Ferrograph taperecorders. $50 each. Rod Osborne, P.O. Box 2098, Tauranga. Ph 07-5442887. email rod1@ihug.co.nz

Lamphouse Annuals 1947/48 and 1951/52. Both in reasonable condition. Offers. Graeme Lea, 73 Wallace Place, New Plymouth. Ph 06-7585344.

Marconi standard signal generator TF-.144H. Frequency range 10kHz to 72MHz. Output range 0.2 microvolts to 2 volts. With handbook, matching and attenuator pads. All in excellent condition. $95 ONO. Des Wright, 3 Tamatea Drive, Snells Beach 1240, Auckland. Ph 09-4256068.

Many spares for radios, gramophones, cabinets, chassis, valves,, consol radios, radiograms etc. Also I am looking to swap for an Edison combination K model reproducer, either of the following: 2 only diamond disc reproducers, 1 Chaney reproducer & tone arm, 1 Chaney reproducer head and many graophone parts etc - all in good condition. Melody Farm Music Museum, 104 Muri Road, Pukerua Bay, Wellington.

Valve cartons, 4 sizes, small and GT $10 per 100, Medium $12 per 100, Large $18 per 100, all plus postage. Any quantity available, discount for large orders. Paul Burt, 44 Hastings St West, Christchurch 8002. Ph 03-3327157, fax 03-3327059.

Cabinet for Stewart Warner R126 (1934) average condition. Radiola 45E 5 valve TRF chassis good for parts or possible restoration. Avo Valve Characteristic Meter Mk3 (single meter black front panel). Autocrat car radio / portable radio. Ian Greaves 8 Bassett Place,Taradale, Napier. Ph 06- 8449913. email IGGC@xtra.co.nz

Tube valve voltmeter "Micovac" 1955 model. $30 ONO. Wayne Griffin, Ph 09-5289118, email zl1ujk@xtra.co.nz

Kevin Horn Radio sale. Still lots of radios from my sale on Saturday 11th of Jan, from $5 to $400. To find out more phone me on (07) 8636865
or email me hornfamily@paradise.net.nz

WANTED

Rogers R741 7 valve TRF Chassis (1931) Ian Greaves 8 Bassett Place,Taradale, Napier. Ph 06-844 9913. email IGGC@xtra.co.nz

Photocopy of the front cover of the 1934 Lamphouse Catalogue. Also would like to locate a copy of their 1940/41 catalogue. Graeme Lea, 73 Wallace Place, New Plymouth. Ph 06-7585344.

Any aircraft related transmitters, receivers or electronic equipment. Also type 19 sets. Rod Osborne, P.O. Box 2098, Tauranga. Ph 07-5442887. email rod1@ihug.co.nz

Dial glass for a Columbus Model 91 (49-50). Ray Dwyer, 916 Brighton Road, Ocean View, Dunedin. Ph 03-4811624.

Plastic piece which fits behind the knobs of a Columbus 90 and carries the notation for the knobs. Also chassis and speaker for Majestic console chassis 95, reasonable price please. Bob Kean, Riverside Flintofts Road. RD1. Culverden. Ph 03-3158162, fax 03-3158162.