AVAILABLE (Cont.)

Collection of 120 vintage radios, all in good going order. Open to a fair offer. Harold Ault, c/o Kawhia Postal Services, Kawhia. Ph 07/8710767.

AWA communications receiver I-C6770, 5 band, 200kHz to 30 Mhz, good condition and working $135; USA made Supreme Signal Generator model 189, 100kHz to 30 Mhz, good condition but not working $115; Valve Tester model TST, Radio Equipment Pty Aust., with instructions, reasonable condition but not working - offers. Write J Riddle, East Takaka Rd, Takaka RD1, Nelson 7172.

Eddystone 670 marine receiver $115. Ray Devereux, Daniels Rd Kingsdown RD1, Timaru 8621. Ph 03/6849089 or email rdever@timaru.com

Rare Philco 1939 model 39-3116, Canadian manufacture imported last year. Has single valve cordless remote control using telephone dial. Remote functions but receiving end needs some work. Radio goes well using stepdown trannie. Large floor standing model too large for me. Wish to trade for good cathedral style radio. Can deliver to Auckland or Palmerston Nth FOC. Phone Andy 03/3559272 Christchurch.

WANTED

Circuit/Manual of Hallicrafters 'Sky Buddy' receiver. Ray Devereux, Daniels Rd Kingsdown RD1, Timaru 8621. Ph 03/6849089 or email rdever@timaru.com

The three speaker bolts complete with ornate cup washers for a Philco 20. Will buy or am prepared to make an exchange of significance to acquire the right bolts. Dave McLaren, 25 Aotea St., Dunedin. Ph 03/4550693, Fax 03/4550686. email windave@xtra.co.nz

Driver unit for a medium /large Horn speaker, any brand or condition. D H McDonald, 3-43 Holly St, Avondale, Auckland 7, Ph 09/8286693.

Two knobs for a Radiolette 29 also a badge for same. One 8" speaker pref, with 2K5 ohm field in reasonable condition for BCU. Chassis and/or dial glass for Philips 252, p115 of MGA. Bill Meiklejohn, 56 Kokich Crescent, Onerahi, Whangarei

Valves 201A, Philips 506, E415 & B443. Gary Jones, 10 Guthrie Place, New Plymouth. Ph 06/7587913.

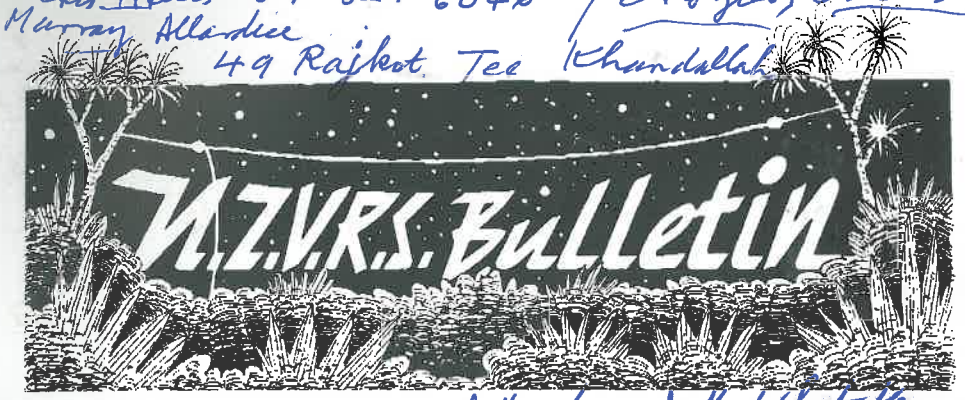
Crosley Show Boy, Buddy Boy or Widgit. Must be complete. Steve Treadaway. Ph/Fax 07/8668507.

Atwater Kent model 55 mains transformer, working or not - this transformer is enclosed in a metal case with fitting lid and measures approx 110 x 97 mm - 130mm high. Also AK model 82 cathedral cabinet. AK model 84 cathedral chassis and any other AK radios or pieces. I will pay any costs incurred to anyone who has any of these items. I do have a few sets available for swap. Bob Cook, 3/475 Blockhouse Bay Rd., Blockhouse Bay, Auckland . Ph 09/6266241.

AVO Model 8 Multimeter - preferably in good condition. John Cooper, 96 Albert Street, Whitianga. Ph 07/8665003 evenings.

Cabinet for Atwater Kent 90 or similar cathedral. Cabinet (possibly a console) for early Ultimate chassis which uses a 2.5 inch diameter Effco dial (interestingly my chassis uses a Wunderlich detector). Also copy of article on LOPT tester from Sept 1993 "Television" - postage and copying expenses paid. Ian Sangster, 75 Anawhata Rd, Piha, Auckland. Ph 09/8149597.

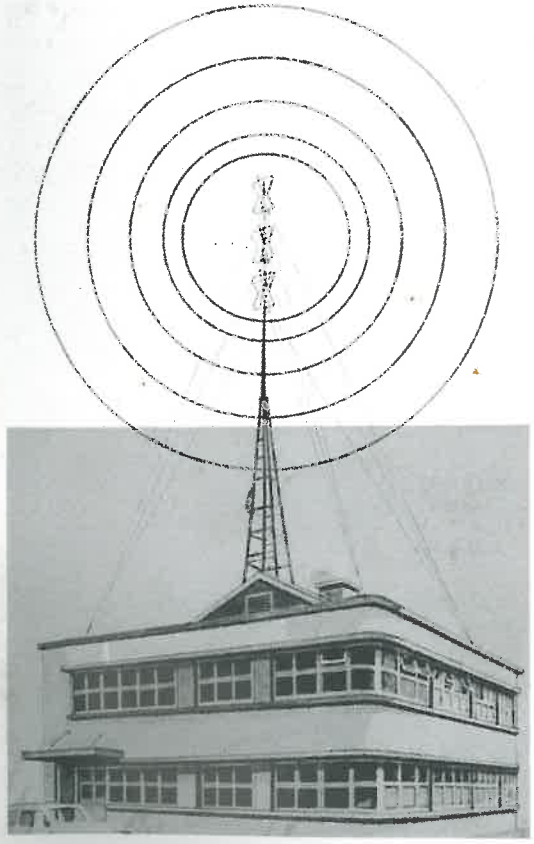
Cliff Maxwell 630-7889 44 Kensington Ave
Chris Hollis 07-827-6046
Murray Allardice 49 Rajkot Tce Khandallah
David Cropper 636-5954
Rcd 12-5-98



letter from Jack Whittington on Bill Illingworth 19-1-27

NEW ZEALAND VINTAGE RADIO SOCIETY

Vol. 19 No.1 May 1998



Above: Al Bell, the founder of Bell Radio-Television Corp Ltd

Left: Transmitting antenna of Bell's experimental TV station ZL1XQ atop the No.2 factory at 75 Dominion Road.

NEW ZEALAND VINTAGE RADIO SOCIETY

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

PRESIDENT: Ian Sangster, 75 Anawata Rd, Piha Rural Delivery, New Lynn, 1250. Ph 09-8149597.

SECRETARY: Grahame Lindsey, 110 Sylvan Ave, Northcote, Auckland. Ph 09-4192033. General correspondence as well as requests for purchase of books, badges and power cable are handled by the Secretary.

TREASURER: David Crozier, 154 Grey St, Onehunga. Ph 09-6365954 or 0800-187161. 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.

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. Bulletin distribution is arranged by Chris Hollis, 13A Princes St, Cambridge. Back numbers of most issues are still available from the **FOUNDING EDITOR**, John Stokes, 281C Hillsborough Rd, Mt Roskill, Auckland. Price is $1.50 each for numbers up to volume 10 and $2 for issues from Volume 10 onwards. Cheques to be made out to NZVRS.

NZVRS LIBRARY Requests for circuit diagrams, books and magazines from our library should be made to the **LIBRARIAN**, Ernie Hakanson, 17 Williamson Ave, Grey Lynn, Auckland. A small charge will be made for copies of items supplied.

AUCKLAND MEETINGS are held on the third Monday of each month at 7.30pm in the meeting room at the rear of the Methodist Church, 426 Dominion Rd, Mt Eden. Sales of vintage items are held at these meetings in the months of March, June, September and December.

WAIKATO AREA. Next meeting will be held on Sunday 7th of June commencing at 1.30 pm. Venue will be advised.

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

CHRISTCHURCH AREA. Contact Russ McKee, 39 Halliwell Ave, Christchurch for details. Ph 03-3525778.

CONTENTS

FROM THE EDITOR

The early days of television broadcasting in New Zealand were an exciting period and Clifford Maxwell was well placed to know. His account of the part played by Bell Radio-Television Corp in fostering the development of what is now a major industry makes very interesting reading. Particularly as in the hurly burly of daily life one is inclined to forget the details, if known in the first place, and for those 'youngsters' who were not alive at the time it is timely to remind them of the birth struggles of an entertainment medium which it is hard to imagine being without.

It is heartening to see the enthusiasm of members who have arranged public displays of their collections. In this issue we carry some details of the long term display arranged by the Wellington Branch in the Onslow Historical Rooms. Members visiting Wellington will be able to place it on their list of attractions to visit: Short term exhibits, such as the Edendale effort, carried out in conjunction with other displays have the benefit of relatively large audiences. Members are to be congratulated on these efforts which help in publicising our endeavours to preserve the past.

As usual this bulletin contains articles by our regular writers and the Society owes them a debt of gratitude for their careful and painstaking work. There are tentative signs of a stirring among other members who can put pen to paper to relate happenings of general interest but there is a need for a little speedier action. Make a resolve today to write that article which you always thought about contributing; don't worry about the grammar, spelling or format - if required the editor can correct these little matters. Tell us instead of your own or your club's goings-on, your speciality, even your disagreements with the established way; we are all keen to read of them. If you have a computer send the editor a disk with the file in text format but if not send your contribution in typed or hand-written form. Include photos if you have them - normal colour prints are adequate.

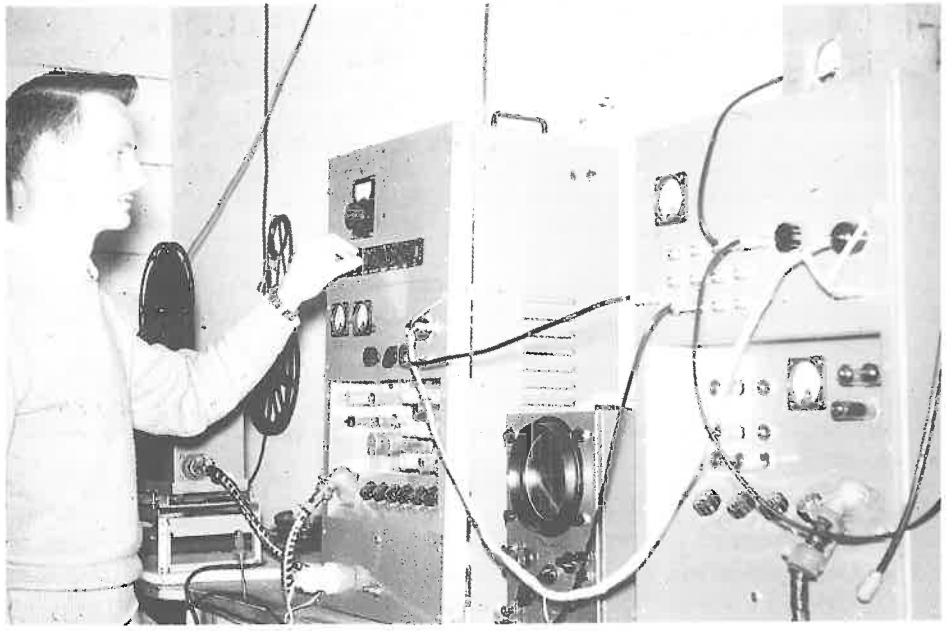
FROM THE TREASURER

The April AGM carried the motions to adopt the proposed constitution and go ahead with the incorporation of the Society. I would like to thank all members who gave their support, views and comments and in a couple of cases extensive submissions.

Especially, I would like to thank Phil McGechie for starting the process with an initial draft. Others who offered valuable guidance include; John Stokes, Ian Jeffries, Graeme Lea, Selwyn Ross, Barry Grumwald & Ian Drabble. The Incorporation process has begun but is not yet complete and the committee is to meet in May to consider some additional constitutional points. Should any changes be deemed necessary a Special General Meeting will probably be advertised later this year. Thank you all for your support so far in this process.

AUCKLAND MEETING CALENDAR

!8th May: Bring and Tell - RCA
15th June: Auction of radios.
20th July: John Stokes speaks on servicing.



Cliff Maxwell selects a pattern from the pattern generator

Charles Rouse, Ted Collins and Cliff Maxwell with 405 line camera.
(the lens turret on the camera had to be rotated by hand to select the required lens)

EARLY DAYS IN NEW ZEALAND TELEVISION

An account of the Bell Radio-Television Corp's work

By Clifford Maxwell

Although now retired, I have spent virtually all of my working life in the radio and television industry and feel the time has come to record something of the history of the early days of experimental television in New Zealand. In 1954 I joined the Bell Radio-Television Corporation as a technician and was involved in the manufacture, testing and alignment of radio receivers. Incidentally I might mention that it was the inclusion of the word Television in the company title which attracted me as a forward-looking youngster to apply for a position in the first place. At that time the main production was a plastic cased mantel radio, the Bell "Colt" and a radiogram known as the "Truetone".

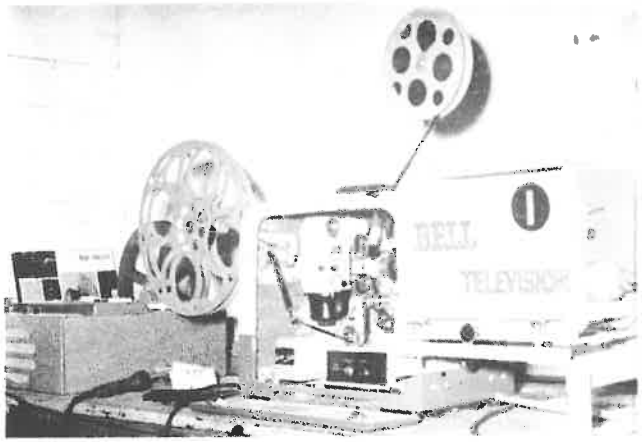
When Mr Al Bell formed the company of which he became managing director, he had the foresight to include the word Television in the title, an indication that he had his sights set on future developments; developments in which he intended to play a leading part. About 1956, with television as yet a shadowy image on the horizon, radio sales started to decline with no immediate prospect of a television service being contemplated by the Government of the day. At this time an engineer from Britain named Charles Rouse joined the company and, as he had experience with television in the UK, Al Bell decided that we would build a closed circuit television system. This consisted of a sync generator, a mixing panel, a live camera and a film camera plus a 16mm projector for showing films. There was no commercial equipment available in the country at the time and these items all had to be built from scratch with the exception of the sync generator which was a Taylor pattern and a Kelvin 16mm projector modified to take a 4-inch focal length lens. The British 405 line system was chosen as at that time the Broadcasting Authority was seriously considering using this system as the standard if a nation-wide television service was to be set up.

With the successful building of the camera chains, using Vidicon tubes and associated equipment, it was decided that there should be a public demonstration of the new medium. The venue chosen was the 1957 Auckland Birthday Carnival at Western Springs held during February of that year. There a large marquee was set up, together with a stage on which various artists performed in front of the camera and films were shown between live performances. Continuity between the various acts and films was provided by an announcer.

In order to provide viewing places throughout the Show a quantity of 405 line receivers had been imported from Britain (with a special license from the Customs Department) and these were placed at strategic sites around the showgrounds for the public to view. The vision and sound signals were fed to these receivers via a 75 ohm cable for video and 600 ohm lines for sound, the receivers having been modified for use as monitors. The demonstration was a great success and in light of this, later in the same year, it was decided that a demonstration should be carried out in the South Island and, for this venture, Dunedin was the site chosen.

Arrangements were made with Brian Keene's apartment store in Dunedin which allowed us to demonstrate television in that city for the first time. The equipment was transported there in the back of a station wagon, accompanied by the factory manager, Ted Collins, the Chief Engineer, Charles Rouse and myself. On one occasion, the local radio station, 4ZB, conducted their Women's Hour session on the radio while we televised the programme

throughout the store. At this location we provided two hours a day of viewing for a period of two weeks with monitors placed throughout the store and in the shop front windows where crowds would gather during the evenings.



A vital link in the Bell telecast chain was this specially modified movie projector. At first many focussing difficulties with the 16 mm film had to be overcome

On our return to Auckland, after the successful demonstration in Dunedin, Al Bell decided to apply for an experimental licence which would enable us to go on the air and so reach a far greater audience. This application was made through the appropriate Government Department and in due course a licence with the callsign ZL1XQ was issued.

Now, secure in the possession of a licence we could proceed with the building of the transmitters which would allow us to radiate a signal across Auckland. The transmitters were installed in our No. 2 factory at 75 Dominion Road by the same team which had built the camera chains, with help from technicians and engineers from outside the Company who had had experience with radio-telephone transmitters and, being very enthusiastic about the new medium, gave willingly of their time to help to get the station on the air. The site at Dominion Road was chosen as it was one of the highest points available in Auckland. Two aerials were used, one for vision and one for sound as no diplexer was employed to combine the signals into the vision aerial. After a period of experiments which involved raising and lowering the aerials for adjustments to improve the radiation pattern the system was declared to be satisfactory and ready to go.

Using the authorised frequencies, 96.4 Mhz for vision and 99.9 Mhz for sound, the first experimental transmissions took place in May 1957 and by July regular 'programmes' lasting for around two hours were being broadcast on four nights of the week. Ostensibly, these were always referred to as 'experimental' transmissions in order to comply with the terms of the licence which prohibited the broadcasting of entertainment.

As stated previously there were no commercially produced receivers available so all the enthusiastic technicians, servicemen and engineers began building their own sets from virtually anything they could lay their hands on, including ex-radar tubes with green or orange phosphors of diameters up to 7 inches. By this time the Seddon Memorial Technical College (now the Auckland Institute of Technology) which had previously obtained an experimental licence was also on the air. This meant that anyone owning a home made receiver now had two transmissions available on which to check their sets. As both Bell and

"Tech" had to share the same channel care had to be taken to avoid overlapping their respective hours of transmission. By mutual agreement, Tech went first and were off the air by the time Bell came on at 7.00 pm. Bell's programmes lasted from two to three hours on four nights a week, Monday, Tuesday, Thursday, and Sunday. On the last two named nights enthusiastic local artists gave live performances in front of the cameras.

An early picture shows good clarity

We would call for reports on the reception of the transmissions and as increasing numbers of technicians completed their home-made receivers more and more calls came in reporting on signal strengths in various locations. The vision transmitter had an output of 100 watts and the sound transmitter an output of 25 watts. The programme sources we used were many and varied, ranging from travel films provided by the airlines and oil companies to test patterns from our pattern generator and live performances from many people who offered their services just to gain experience in front of the cameras. When using films we had to take care not to allow any advertisements to appear and this was done by the simple expedient of holding a piece of cardboard between the projector lens and the film camera for as long as necessary.

We soon had so many requests from people wanting to perform that a lady by the name of Olive Scott offered to co-ordinate the acts which then allowed the technical staff to concentrate on their own jobs without having to worry about trying to deal with enthusiastic artists seeking camera experience. Olive Scott was instrumental in forming a group called Pacific Television Productions who assembled all the artists and nominated dates and times for them to perform during live transmissions. This group was not part of Bell Radio-Tv, but worked in close liaison with the Company and provided a great source of programme material for the experimental station. We had singers, dancers, magicians, animal acts, brass bands, orchestras, solo musicians, judo demonstrations and other acts too numerous to recall. The services of announcers from local radio stations were also willingly given as they were all interested in gaining working experience in the new medium.

A newsreel film was made each week by photographer Harry Reynolds about items of interest happening in and around Auckland and this was shown during Sunday night transmissions.

By this time we had obtained a 625 line receiver from Australia and had installed a large log periodic antenna (21 elements as I recall) on top of the building facing due West towards Australia. This receiver was always turned on during the evening just in case any signals

were received from across the Tasman. This procedure was continued for some time until one Tuesday evening in November 1957 when the sunspot activity was very high. We were just about to conclude transmissions for the night at about 9 pm when intermittent sound and vision signals were received on the 625 line set. Reception remained poor for about half an hour then settled down with no fading at all and channels 2,7, and 9 from Sydney were received without an interruptions for the next three hours, the pictures being absolutely noise free and rock steady. With this source of material available to us we decided to rebroadcast the Australian transmissions by setting up the 405 line video camera and a microphone in front of the 625 line receiver and transmitting the signal for the benefit of local experimenters. Strange as it may sound now it was a very exciting time, both for ourselves and for those who were watching out in the field.

Radio Inspectors from the NZ Post Office (the Government department monitoring all radio transmissions at the time) were very interested in our work as, here again, they were learning about the medium and would report in on the strength and quality of our signals. As I recall, the Chief Radio Inspector was Ted Wilcox. Field coverage of the Bell transmitter extended from Helensville, approximately 50 km North of Auckland to Pukekohe, approximately 50 km to the South of the City.

The NZ Government had not made any decision about television broadcasting and there was no commitment from either Government or Opposition to the introduction of a service. Our transmissions were generating a great deal of interest among Aucklanders and work was also progressing within Government Departments where finally a decision was made to adopt the CCIR 625 line system if a service was introduced. It was therefore quite a shock when the Company received a letter stating that not only had we to change from 405 lines with AM sound but we also had to shift frequencies to 88.75 Mhz (sound) and 83.25 Mhz (vision) and employ the CCIR 625 line system. At the time this change was ordered discussion did take place with the powers that be as to the suitability of the new frequencies allocated as part of the channel we were to use was within the band which could be used for future FM radio transmissions. The Company, being suspicious, queried this point but was assured that there would be no problems as any FM service would be many years away.

The required changes meant that all our equipment, sync generator, camera chains, mixers, transmitters and aerials had to be rebuilt before we could continue with our experimental transmissions. In addition all the receivers and monitors had to be modified as well. A team of technicians and engineers was occupied for some weeks on this work before the station was once more up and running providing experimental transmissions for the viewers of Auckland. At this time the opportunity was taken to increase the power output of the vision transmitter by adding a linear amplifier after the final output stage. Quite apart from all the disruption to Bell Radio-Tv Corp transmissions, all receivers constructed privately by technicians had to be rebuilt by their owners

As time went on into 1958 all was proceeding well and, although in the terms of our experimental licence we were not broadcasting entertainment, interest was growing in the community. Rerunning the same old films 30 or 40 times interspaced with test patterns was for the benefit of technical people who were working on their own receivers at home. However, some of our live transmissions had created interest among the general public who

could see the benefits of entertainment in the home as they came to realise what great potential the new medium had.

During the course of our experiments we did an outside broadcast which showed the opening of the new linear accelerator for the treatment of cancer at the Auckland Public Hospital. To achieve this we packed two camera chains and their associated gear into a truck together with vision and sound transmitters with two portable dipole aerials and transported everything to the Auckland Hospital where it was reassembled on site to televise the opening of the new facility. The transmissions showed the arrival of the guests and official party, the opening speeches and the inside of the building where the linear accelerator was housed. To the best of my knowledge this may have been the first outside broadcast in New Zealand.

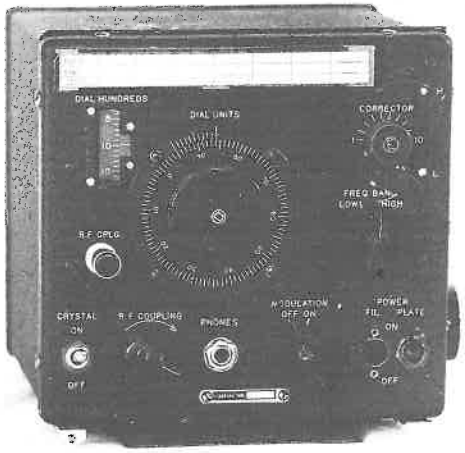
On another occasion we were approached by staff from Greenlane Hospital and asked if we would televise an operation involving repairing a hole in the heart in a live sheep. A camera was set up in the operating theatre and monitors placed in the hall so that 150 doctors could watch the procedure as it was impossible to accommodate that number of people around the operating theatre. By mid 1958 virtually all the problems we had run into when changing over our equipment had been overcome and our experimental transmissions were progressing very well. In addition we were attracting announcers from the NZBS such as Ian Watkins and Merv Smith who appeared in front of the camera so that they could gain experience working in the new medium.

The Government was still not very enthusiastic at this time even though the Minister of Internal Affairs, Mr Anderton, appeared before the camera in October 1958 to talk about his trip to Antarctica. This was somewhat surprising as by this time the Government had gone to the country in 1957 with the introduction of television as an election plank.

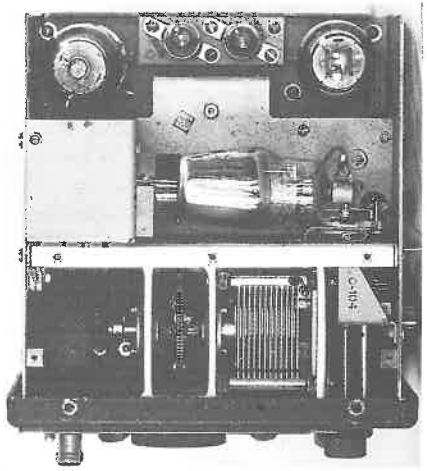
It was about this time that we were yet again ordered by the Post Office to shift frequencies, this time to channel 6 using 189.25 Mhz for vision and 194.75 Mhz for sound. The reason given for requiring this change was that we were operating within the 88-108 Mhz band which was reserved for FM radio use. Once more we had to go through the process of modifying the transmitters and aerials before we could continue with our transmissions. The word throughout the industry at this time was that the government of the day was making it as difficult as possible for Bell to continue transmitting and although instructions for all changes came from the Post Office the policy was being orchestrated by the Government in an attempt to force us off the air without actually withdrawing our licence. By now the whole situation had become very political with questions being asked in Parliament. Finally the Government of the day under public pressure decided to set up a service which came into operation in June 1960.

The last time Bell's station, ZL1XQ , was on the air was early in 1961 when a fire at the NZBS studios at Shortland St temporarily forced a closedown, Bell filled in the gap by transmitting test patterns and old travel films while NZBS repaired their smoke damaged equipment.

Having accomplished his avowed aim of forcing the introduction of television in New Zealand, Al Bell was now ready for his next step, to be the first in the field of television receiver manufacturing, but that is another story.



Type LM-10 Front view



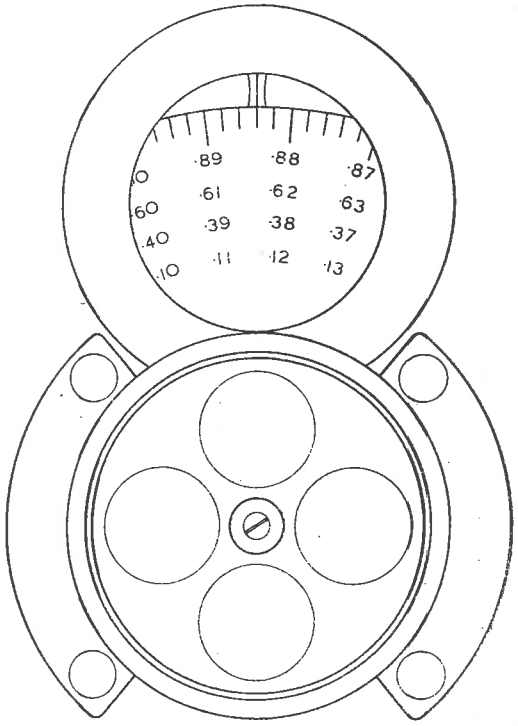
LM-10 Internal view showing tuning capacitor and worm drive.

FREQUENCY 3000 - 3100 / 6000 - 6200 / 12000 - 12400 DIAL 2451.2 - 2653.9

DIAL	FREQUENCY			DIAL	FREQUENCY		
2451.2	2999	5998	11996	2553.7	3060	6100	12200
				2555.7	3061	6102	12204
2453.2	3000	6000	12000	2557.7	3062	6104	12208
2455.2	3001	6002	12004	2559.7	3063	6106	12212
2457.2	3002	6004	12008	2561.7	3064	6108	12216
2459.3	3003	6006	12012				
2461.3	3004	6008	12016	2563.8	3065	6110	12220
				2565.8	3066	6112	12224
2463.3	3005	6010	12020	2567.8	3067	6114	12228
2465.3	3006	6012	12024	2569.8	3068	6116	12232
2467.3	3007	6014	12028	2571.8	3069	6118	12236
2469.4	3008	6016	12032				
2471.4	3009	6018	12036	2573.8	3070	6120	12240
				2575.8	3071	6122	12244
2473.4	3010	6020	12040	2577.8	3072	6124	12248
2475.4	3011	6022	12044	2579.8	3073	6126	12252
2477.4	3012	6024	12048	2581.8	3074	6128	12256
2479.4	3013	6026	12052				
2481.4	3014	6028	12056	2583.8	3075	6130	12260
				2585.8	3076	6132	12264
2483.5	3015	6030	12060	2587.8	3077	6134	12268
2485.5	3016	6032	12064	2589.8	3078	6136	12272
2487.5	3017	6034	12068	2591.8	3079	6138	12276
2489.5	3018	6036	12072				
2491.5	3019	6038	12076	2593.8	3080	6140	12280
				2595.8	3081	6142	12284
2493.5	3020	6040	12080	2597.8	3082	6144	12288
2495.5	3021	6042	12084	2599.8	3083	6146	12292
2497.5	3022	6044	12088	2601.8	3084	6148	12296
2499.5	3023	6046	12092				
2501.5	3024	6048	12096	2603.8	3085	6150	12300
				2605.7	3086	6152	12304
2503.5	3025	6050	12100	2607.7	3087	6154	12308
2505.4	3026	6052	12104	2609.7	3088	6156	12312
2507.4	3027	6054	12108	2611.7	3089	6158	12316
2509.4	3028	6056	12112				
2511.4	3029	6058	12116	2613.7	3090	6160	12320
				2615.7	3091	6162	12324
2513.4	3030	6060	12120	2617.8	3092	6164	12328
2515.5	3031	6062	12124	2619.8	3093	6166	12332
2517.5	3032	6064	12128	2621.9	3094	6168	12336
2519.6	3033	6066	12132				
2521.6	3034	6068	12136	2623.9	3095	6170	12340
				2625.9	3096	6172	12344
2523.7	3035	6070	12140	2628.0	3097	6174	12348
2525.7	3036	6072	12144	2630.0	3098	6176	12352
2527.8	3037	6074	12148	2632.1	3099	6178	12356
2529.8	3038	6076	12152				
2531.9	3039	6078	12156	2634.1	3090	6180	12360
				2636.1	3091	6182	12364
2533.9	3040	6080	12160	2638.1	3092	6184	12368
2535.9	3041	6082	12164	2640.0	3093	6186	12372
2537.9	3042	6084	12168	2642.0	3094	6188	12376
2539.8	3043	6086	12172				
2541.8	3044	6088	12176	2644.0	3095	6190	12380
				2646.0	3096	6192	12384
2543.8	3045	6090	12180	2648.0	3097	6194	12388
2545.8	3046	6092	12184	2649.9	3098	6196	12392
2547.8	3047	6094	12188	2651.9	3099	6198	12396
2549.7	3048	6096	12192				
2551.7	3049	6098	12196	2653.9	3100	6200	12400

CRYSTAL CHECK POINT - 3000, 6000, 12000 - 2453.2

Page of LM-10 Calibration Book



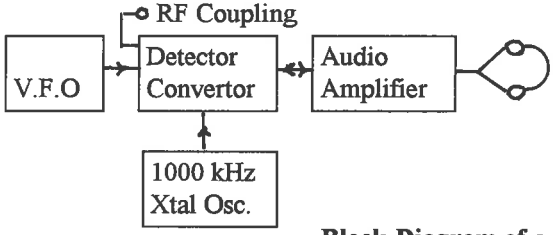
Dial of British Calibrator Crystal No. 10

FREQUENCY MEASUREMENT - THE CRYSTAL CALIBRATED FREQUENCY METER.

R Motion

With the advent of the quartz crystal there came a major change in the accuracy of portable frequency measuring equipment. The variable capacitor/coil style of 'wavemeter' which could at its best maintain an accuracy of 0.25% was replaced with an instrument which readily gave a reading within 0.025% - the crystal calibrated frequency meter.

World War 11 greatly accelerated the need for accurate frequency setting. Transmitters and receivers operating on fixed frequencies could be easily maintained on frequency using quartz crystal control but this left them open to enemy interception and blocking action. The Armed Forces required equipment which could be changed in frequency at will but which could be accurately netted. Simple frequency synthesisers were unknown at the time thus the crystal calibrated frequency meter came into its own. With it, transmitters and receivers using variable frequency oscillators could be set on a particular operating frequency with sufficient accuracy to ensure reception if path conditions were favourable.



Block Diagram of a Crystal Calibrated Frequency Meter

Many different designs were produced to optimise these instruments for their particular purpose but the basics remained the same. Each model combined a calibrated variable frequency oscillator (VFO) of good stability and resetting accuracy with an accurately set quartz crystal oscillator (commonly though not necessarily on 1000kHz). The VFO calibration could be checked at any time by heterodyning, in a separate mixer, the fundamental or harmonics of the variable oscillator to zero beat at audio frequency with the fundamental or harmonics of the crystal oscillator. These 'whistles' gave a series of accurately known marker points throughout the frequency range of the variable oscillator to which the oscillator dial could be reset when necessary. With the VFO reset in this manner its dial calibration for some distance on either side of the marker point could be confidently assumed to be within specification.

A good example of this type of frequency meter is the US Navy type LM10 depicted opposite. This instrument covers the frequencies 125kHz to 20MHz in two ranges and was designed for use on Naval aircraft being powered from the aircraft power supply. The well-known frequency meter, type BC221, is the same instrument arranged for powering from internal batteries.

The following table shows the markers used in a typical meter having a 1000kHz crystal oscillator (X) and a variable oscillator (F) covering 2 to 4MHz.

Marker(kHz)	Makeup	Marker(kHz)	Makeup
2000	2X & F	2166.666	13X & 6F
2250	9X & 4F	2333.333	7X & 3F
2500	5X & 2F	2666.666	8X & 3F
2750	11X & 4F	3000	3X & F
3250	13X & 4F	3333.333	10X & 3F
3500	7X & 2F	3500	7X & 2F
3750	15X & 4F	4000	4X & F

Such a meter can be used to measure frequencies above 4MHz by mixing the unknown with a harmonic of the frequency meter output. Ranges up to 20MHz are common.

Stability of the variable frequency oscillator and its dial calibration is all-important. The oscillator coils are wound on ceramic formers and the tuning capacitor/dial is an excellent example of precision mechanical engineering using a worm drive to establish a dial which is resettable to better than one part in 50,000.

When used to receive a transmitted signal the audio amplifier increases the beat note level to give comfortable headphone output. However, when the frequency meter is required to generate a signal for setting a communications receiver on frequency the audio stage is switched to act as an audio frequency oscillator which modulates the VFO and renders the output of the frequency meter easily identifiable when received. Two neon lamps in series serve to stabilise the VFO screen/anode supply.

The dial of the LM-10 is calibrated 0 to 5000 with a vernier to divide each unit into 1/10th steps. This calibration is then translated into actual frequency using a book of calibration charts one page of which is reproduced as a sample on page 10.

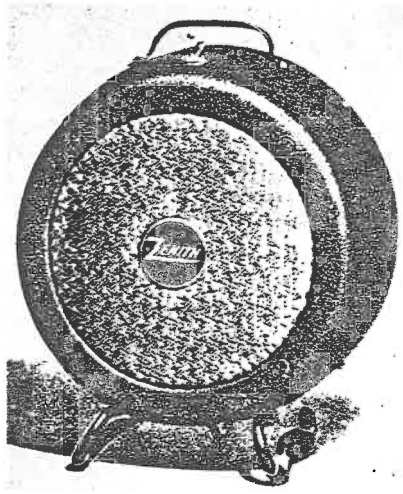
Operation to measure an unknown frequency requires that the frequency of the VFO be first corrected using the nearest crystal check point to the unknown then the VFO adjusted to zero beat with the unknown and the VFO dial reading observed. This dial reading is then converted to a frequency using the relevant chart in the calibration book.

A British adaptation of this type of frequency measuring set is the Calibrator, Crystal No. 10 which was designed for the purpose of generating an accurately known frequency in the range 1.5 to 10 MHz. As before the basic unit mixes a crystal oscillator (500kHz) with a VFO (250 to 500kHz). In this meter the fundamental of the VFO adds to or subtracts from the harmonics of the crystal oscillator to generate the wanted frequency which allows the dial of the VFO to be directly calibrated with the four 250kHz ranges which comprise each megahertz (see diagram on page 10). Since the received frequency is approximately known from the receiver dial setting the VFO scale to be used is for the most part readily determined although it can be a bit tricky when the wanted frequency is very close to a crystal harmonic.

EXTENSION SPEAKERS

John W Stokes

As the name implies, an extension speaker is one intended for use at a distance from a radio having its own inbuilt speaker. The need for such speakers arose back in the days of only one radio in a home, a period covering mainly through the 1930s and 1940s and even up to the early 1960s in some cases. Many radios then in use were often bulky and too heavy to be conveniently carried from room to room and so arose the need for some means of listening to a programme in another room. This was particularly true in cases where a large radiogram was installed in the 'front' room of a house.



ZENITH PORTABLE SPEAKER - usable with all ZENITH models. Makes two radios out of one, has an 'on' and 'off' switch providing for operation at will. A 20 foot Extension Cord permits use in places not reached by the Radio Set itself.

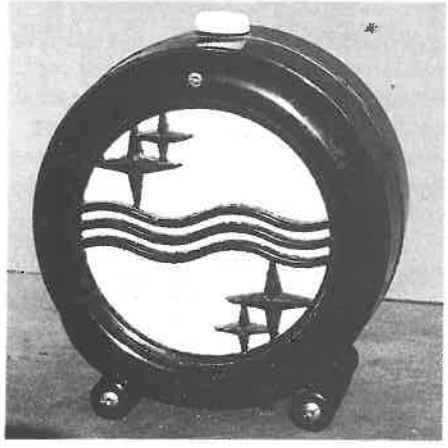
Of course the simplest and most effective solution to the problem was to have a second radio but, initially, even the smallest radios available in this country were comparatively expensive, certainly many times the price of an extension speaker. The procedure of turning up the volume until the walls rattled in order to hear the radio in an adjacent room will of course be ignored as a possible solution!

Because of the popularity of extension speakers in the UK, it became common practice for most radio manufacturers to provide suitable connections as standard fittings on their sets. By comparison, in the US, extension speakers were little used and so it was rare to find connections provided on American receivers and when they were it was usually on export models. This meant that extension speakers themselves were quite a rare commodity in the US, one of the few firms to manufacture them being the Zenith Radio Corporation. Examples of these Zenith metal cased speakers have surfaced locally in recent years, having now become collector's items themselves.

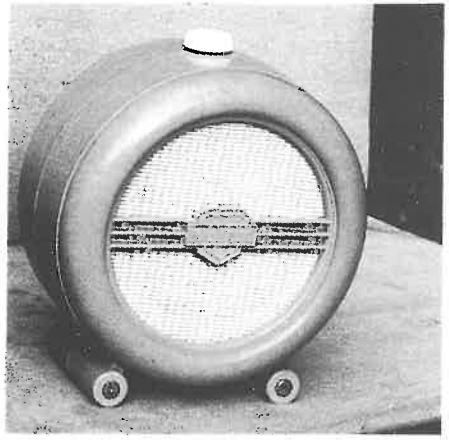
In New Zealand, extension speakers never became popular enough to warrant all local radio manufacturers fitting connections to their receivers as standard practice, although during the 1950s some firms made a gesture by using speakers with fahnestock clips attached to voice coil terminals. Philco commonly used a neat British combined switch and connector and Pye used the standard British wander plug sockets mounted on the chassis. Philips, obviously following European practice, fitted many of their receivers with extension speaker connections which took the form of banana plug sockets of the same type as they used for aerial and earth connections. Actually, factory-made extension speakers did not come on the market in this country until much before WW2. The first of what may be truly called extensions speakers, ie. those fitted with a volume control and/or a switch, were not listed in any NZ catalogues until 1937. Although these speakers were of the low impedance moving

coil type, they usually incorporated an inbuilt transformer to allow direct connection to the plate circuit of the output stage, apparently following an ancient tradition where many of the earliest AC receivers were operated with separate speakers.

From about 1945, extension speakers had become stock-in-trade items with radio dealers throughout the country. A fairly standard design of polished wooden cabinet was used to house a six or eight inch PM speaker fitted with a volume control, connections to the radio being made to the voice coil or output transformer secondary of the set's inbuilt speaker. A switch was usually fitted on the radio to allow either or both speakers to be used as required. Impedance matching was not regarded as an important consideration.



Philitone



Mullard

Philips in NZ

A certain type of Philips extension speaker deserves mention for two reasons, firstly because of its uniquely New Zealand origin and secondly because of the way in which it has become yet another collectable coloured plastic item. Recently, this writer made a determined attempt to trace the origin of these 'Philitone' speakers and has at least satisfied himself in the process.

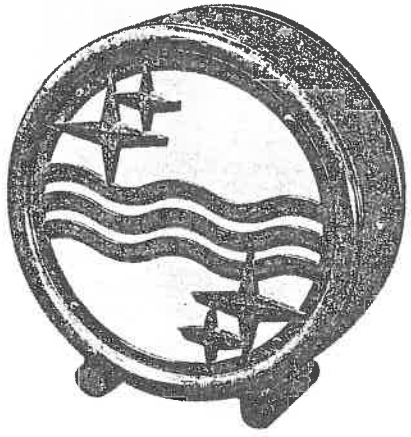
The fact that nowadays cabinet styling is of great appeal to many collectors, both in NZ and overseas, in itself warrants taking a closer look at the birth of the Philitone. A good indication of the release date can be found in the 1950-51 'Lamphouse Annual' where the equivalent Mullard speaker is listed as a new item having not previously been available. If we can assume that the Philitone was released at the same time, then this event serves to date both brands.

Back in the late 40s and early 50s, extension speakers were in their heyday and as Philips had by then turned largely to the use of bakelite (They called it Philite) for radio cabinets, it was but a step to think of producing a bakelite extension speaker. Now, and here is the interesting part, to the best of this writer's knowledge, the radio cabinet designs used in NZ at this time had originated in Eindhoven, so it is logical to assume that this would have applied to the Philitone too. However, investigations failed to reveal any indication to confirm this deduction. This could only mean one thing, the speaker cabinet had been designed in New Zealand - something rather difficult to accept, bearing in mind what has just been said. The

best, and perhaps the only way to prove the point was to look for someone who had been in the Philips factory at the time and who could now shed some light on the matter.

Several years ago, Murray Allardice, a man who had spent most of his working life with Philips in Wellington was able to provide some helpful information on the history of the firm's activities. But was he still living in Wellington? The telephone directory provided the answer - Yes he was. Incidentally those readers who may not be familiar with Mr Allardice's name may be interested to know that the initials M.H.A. appearing on the circuit diagrams of some Philips receivers are those of the gentleman concerned - how about that?

This fact was mentioned by Ross Paton in an article in "The Radiophile" Christmas 1994 issue



1932

Philips type 2021 - not an extension speaker

A phone call to M.H.A. elicited the fact that the Philitone and its Mullard twin had actually been designed by Philips Electrical Industries of NZ Ltd who had been given a free hand by Eindhoven, a fact that may seem surprising in view of what was said earlier about the radio cabinet designs. In choosing a grille design to cover the speaker opening the traditional Philips waves and stars logo* was an obvious choice. As to whether anything else influenced the NZ design is open to question, but it is a fact that a 1932 Dutch bakelite speaker, type 2021, was very similar in general style, though very different internally. It is a little hard to believe the similarity of the NZ production was just coincidental, but Mr Allardice affirms that this was indeed the case.!

Mullard

The question now arises - why was a Mullard version of the Philitone considered necessary to cater for what must have been a comparatively small market? In order to answer this question it is necessary to know something of the trading arrangements existing here at the time. Since prewar days the firm of C & A Odlin Timber and Hardware Co. Ltd had held the agency for imported Mullard radios made in the Philips British factory. Following the end of the war, Philips in NZ had to rely entirely on their local production to supply the market. As in prewar days, both brands used identical chassis but carried different model numbers and were fitted in different cabinets. When the Philitone speaker was produced Odlins would have been left out in the cold unless an equivalent speaker but one of noticeably different appearance could be provided. This need had been foreseen by Philips and a replacement front insert in the mould was provided to enable a Mullard version to be produced economically from the same die.

Another bit to add to the story. Recently the NVHR (the Dutch Vintage Radio Society) published a list of Philips separate speakers made during the years extending from 1926 to 1936 and right at the bottom of this list was a solitary entry dated 1954. Unlike all other speakers listed this one carried no type number but the name 'Philitone' appeared. So what

was a New Zealand speaker doing on a list of Dutch speakers? Obviously a Philitone must have found its way to Holland at some time where it was easily identified as a Philips product by the waves and star motif, but how could the date 1954 have been arrived at? Reference to *More Golden Age Of Radio,* P115 reveals that this 1954 date was included in the captions of the two Philitone speakers illustrated, but, as has been mentioned earlier, this was not the date of first production, though this reference could well have been the source of the information used in the NVHR listing. Having come this far in our search, it is appropriate to record some details of the Philitone production which extended over a period of at least eight years.

Initially a five inch bagged speaker was used, which was later changed to a 6 inch dust proofed type. The final type of speaker fitted was a 6 inch hexagonal one, type 3700M. All versions had a volume control mounted on the top of the cabinet which was fitted with the same type of push-on knobs as used on Philips radios of the period, the control being itself a British Colvern or Welwyn having a 1/4" diameter shaft. For the first few years the cabinet backs did not carry the waves and stars logo but by about 1954 the logo appeared on both the front and the back. Apart from that, an externally accessible terminal connection was later provided, a vast improvement on having to open up the cabinet and solder the external wiring to a connection points inside, as was originally necessary. Surely only Philips could have thought up such an impractical idea!

A word now for bakelite collectors to whom the matter of colour is all important. A Philips leaflet dated 1954 mentions four colours - cream, walnut, peach and silky oak. Mullard listed five colours - cream, pastel pink, light mottled red and dark mottled red. In both cases variations have been sighted. The range of knob colours was much more limited with ivory being the most common.

A factor which must have had the effect of limiting the sale of Philips/Mullard extension speakers was the relatively low margin of profit available to retailers. In the days of fixed retail prices (approved by the PIT of course!), a markup of 50% was quite common for most radio apparatus but in the case of these speakers the markup was only 25%, less than half the norm. By comparison, other makes of speakers available to dealers showed a 50% markup.

Acknowledgments to Murray Allardice for providing much useful information and to Bob Cook for supplying details on individual models.

*An explanation of the mystic symbols used in the logo appears in the NZVRS Bulletin, 7.3.4

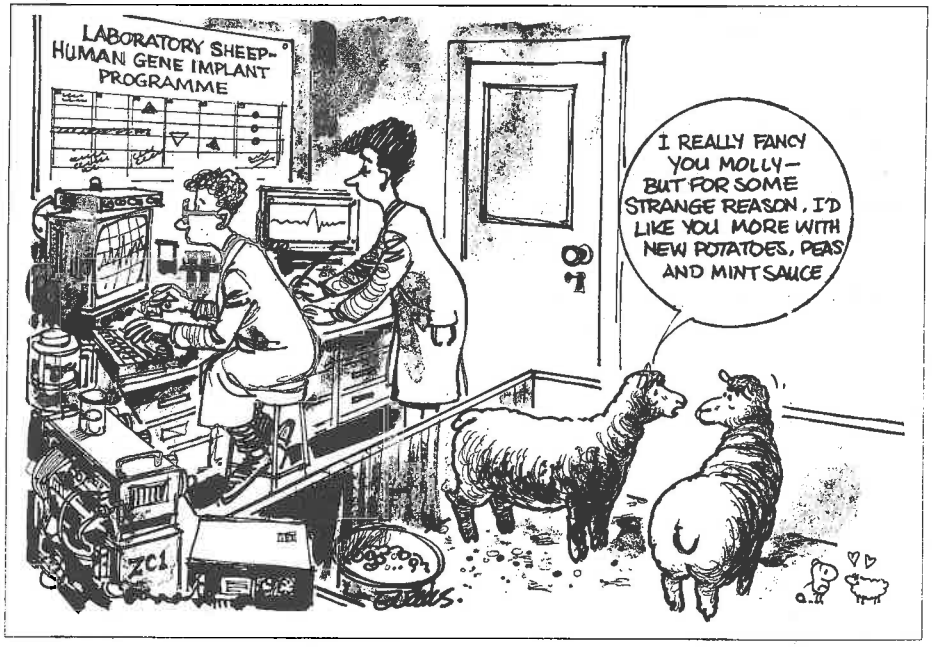
NEW MEMBERS

Mark Fieldgate	Wanganui	Leah Willemsen	Hamilton
Simon Wade	UK	Warwick Harling	Auckland
Richard Boyd	Sydney	Wayne Watson	Nelson
Richard Stevenson	Auckland	Ivan Nelson	Helensville
Harry Webber	Whakatane		

TRANSLATION TABLE FOR BEGINNERS

(Original published in the Feb 98 Bulletin of the Southern California Antique Radio Society,)

Serious collector.....Rich collector.
Connoisseur.....Very rich collector.
Time waster.....Collector who walks away from overpriced items.
Collectable.....Overpriced.
Highly collectable.....Grossly overpriced.
Easily restorable.....Uneconomic to repair.
For display only.....Lethal or internals removed.
c1930.....c1950
Untested.....I plugged it in and it made smoke, now I'm selling it.
Works.....Made a loud hum when I turned it on.
Works well.....One or two stations audible between hum or squeals.
Ideal for beginners.....Everyone else has learned better.
Rare.....No-one wanted it when it was new either.
Restorable.....Cheaper to just build one from scratch.
Reducing collection.....Not sure how I got saddled with these turkeys.
New in the box.....Didn't work when it was new either.
Complete and original.....All factory defects included.
Near show quality.....Show to the nearsighted.
Needs restoration.....Even Armstrong couldn't figure out what the heck is going on in this one.
Suitable for enthusiasts.....ditto.

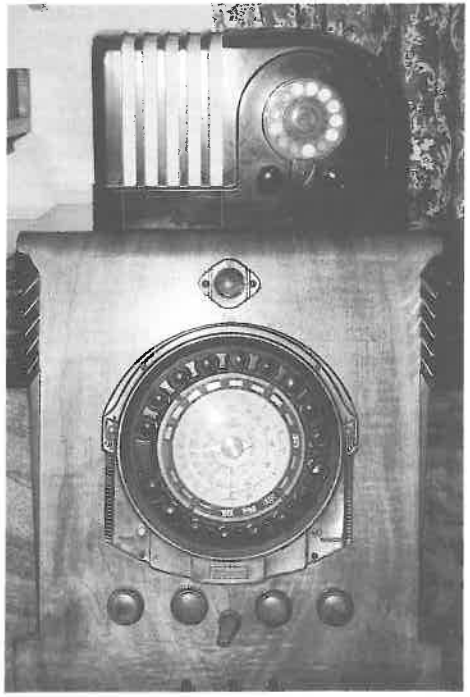


Originally published in the Herald this cartoon is reproduced with the permission of the cartoonist, Malcolm Evans who told us that he was not connecting the ZC1 and laboratory sheep with NZ developments but was looking to include a piece of electronic equipment and he had seen a ZC1.

A LOOK AT TELEPHONE DIAL TUNING

A Williams

Around the latter part of the 1930's radio manufacturers were looking for new features and gimmicks to help sell their latest models. One of these was a form of automatic tuning based on the concept of the dial used on an automatic telephone of that day. I am not sure who was first, It may have been Grunow with their 'Teledial" set advertised in mid 1936 but by 1937 many manufacturers including Philco, Emerson, Wells Gardner and Midwest had models on the market featuring telephone dialling.



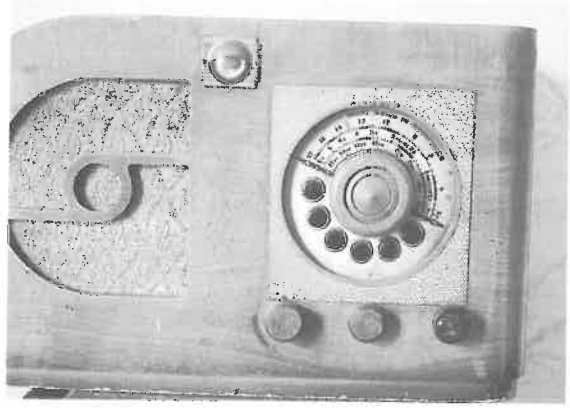
Telephone dials by Wells Gardner. The large A1 Gulbransen and the small Airline 62-455

Most collectors will be familiar with the Wells Gardner telephone dial as used on the Gulbransen A1 chassis (and a larger Lafayette chassis also seen in New Zealand). This dial was a large (7 inches in diameter), heavy, diecast affair carrying 17 preset push buttons around its circumference. Tuning was accomplished by depressing the button for the station required and rotating the whole assembly by hand around to a stop at the bottom. Each button carried an adjustable arm on its rear that could be adjusted for precise location of the station tuned. There was also a provision, via a contact ring, for inter-station silencing when a button was depressed.

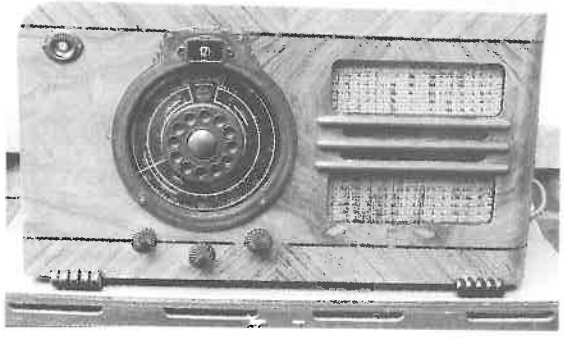
A much simpler concept was used on the little Airline 62-455 also by Wells Gardner. Here a moulded plastic dial is used in place of a conventional pointer. Both models have provision for manual tuning using a conventional knob.

Midwest had another simple arrangement featuring a large tuning knob in the centre of a dial with 6 preset buttons in a semicircle underneath. For automatic dialling a button was depressed and pulled around to a stop at the bottom. Manual tuning could be accomplished using the central wooden knob which gave a 3:1 reduction.

The only New Zealand example of a telephone dial tuned set was a 'Moderne' made by Electrical Service Co. of Willis St. in Wellington. The dial could have been of Australian origin as a very similar one was used by Healing (se page 90 of More Golden Age). The plain bakelite dial is fixed in the centre of a clear plastic disc which also carries the pointer. There are no buttons or preset stops. Station call letters are printed around the outer edge of the



Midwest with Teledial tuning



Moderne 6V (Electrical Service Co. Wellington)

disc and these appear in a window above the dial as stations are tuned in. Unfortunately there is no way to change the call letters as stations changed call or frequency.

The telephone dial concept doesn't seem to have caught on in the UK to the same extent; the Ultra 400 of 1938 being one of the few models to use a Teledial (J Hill 'Radio Radio" p152, Fig 588).. I do not know of any UK Teledial tuned radios being sold in New Zealand.

By 1939 the Teledial had all but disappeared from the scene as manufacturers turned to other push-button systems.

One interesting use of a telephone type dial might be mentioned here. Philco used one in an early 'wireless' remote control in 1939 to send pulses from a handheld (or rather chairside) transmitter. This system is described in an article by Peter Lankshear in 'Discovering Vintage Radio' Electronics Australia 1992 p77. See also Ramirez "Philco Radio 1928-1942' p109.

Extract from the Minutes of the Wanganui Wireless Institute - Wed. 28-7-1920

"... Following a lecture on electricity, which the speaker defined as a name given to an invisible agent known only by its effects and manifestations as shown in electrical phenomena a practical demostration of wireless was given. The apparatus was very crude, consisting of two wine bottles wound with insulated wires, a simple form of detector consisting of two sewing needles and a small piece of carbon between the needle points, hooked up to copper wire strung on a rail and a screw as an aerial in one room and the same in another. Dots and dashes were sent from one room to the other through the intervening wall with the doors shut. Although this is wireless within the law it is also wireless within the rooms and it goes to show that there is still a spark in the amateur, which if given free air (as the Institute lays itself out to get) may be fanned into a flame which may perhaps burn out another stumbling block that at present holds the amateur at arms length from the shores of the unknown. (I thought this budding follower of Marconi was quite a wit - Ed.)

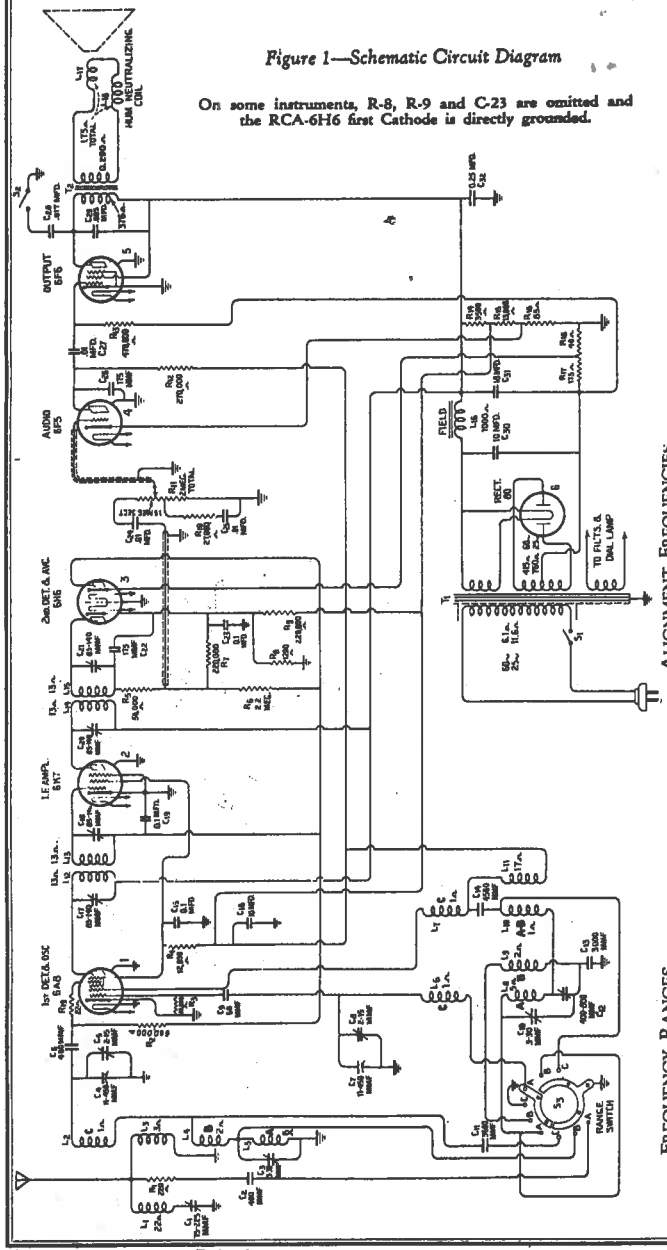
MODELS T6-1,C6-2
Schematic

RCA MFG. CO., INC.

Figure 1—Schematic Circuit Diagram

On some instruments, R-8, R-9 and C-23 are omitted and the RCA-6H6 first Cathode is directly grounded.

IF PEAK 460 KC

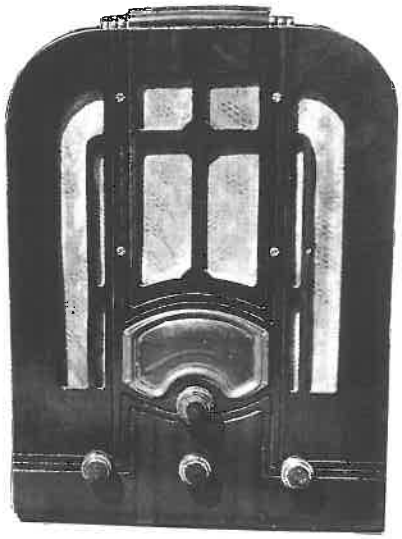


FREQUENCY RANGES	
Band A	540— 1625 kc.
Band B	1625— 5700 kc.
Band C	5700—18000 kc.
Intermediate Frequency	**460 kc.**
POWER SUPPLY RATINGS	
Rating A	105—125 volts, 50—60 cycles, 85 watts
Rating B	105—125 volts, 25—60 cycles, 90 watts
Rating C	100—130/140—160/195—250 volts, 40—60 cycles, 85 watts
POWER OUTPUT	
Undistorted	2.0 watts
Maximum	4.5 watts
ALIGNMENT FREQUENCIES	
Band A	600 kc. (osc.), 1400 kc. (osc., ant.)
Band B	None required
Band C	18000 kc. (osc., ant.)
LOUDSPEAKER	
Type	Electrodynamic
Voice Coil Impedance	2.25 ohms—400 cycles

GLACIAL T6-1

Ian Sangster

I have just reassembled a RCA/HMV T6-1, an upright wooden table set of about 1935 vintage which I purchased some years ago at a ham swap meet. When acquired it was painted red, white and blue (*not original*). Restoring involved stripping all the paint off, having the cabinet re-finished, derusting the chassis, and changing capacitors.



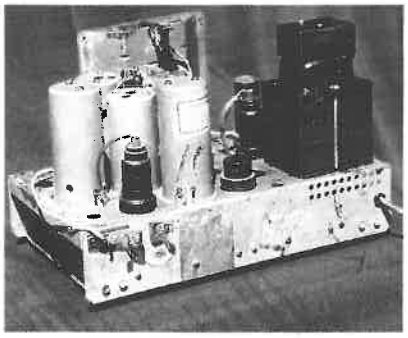
The RCA/HMV T6-1 is a handsome set

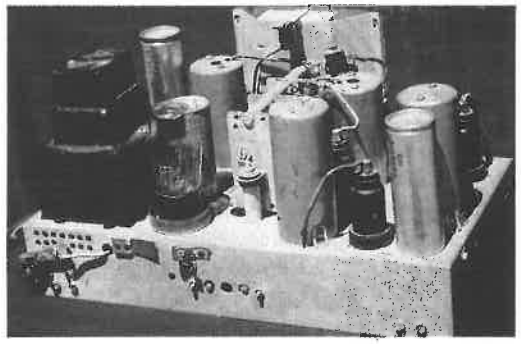
We know GE were the first to introduce metal valves but RCA manufactured them for GE. The T6-1 was an early RCA which used metal valves. It is interesting in that the Rider circuit and the Sylvania tube line-up both show T6-1 as having an all-metal valve line-up with the exception of the rectifier which is shown as type 80. However my T6-1 has a metal rectifier (5Z4) and this is reflected on the paper chart pasted inside the cabinet.

The valve line-up on the T6-1 is as follows; 6A8 oscillator-mixer, 6K7 intermediate frequency amplifier, 6H6 detector, 6F5 first audio, 6F6 audio output and 5Z4 rectifier. The combination of 6H6 detector and 6F5 first audio amplifier reflects the fact that in the initial release of metal valves there was no combination diode-triode or diode-pentode available.

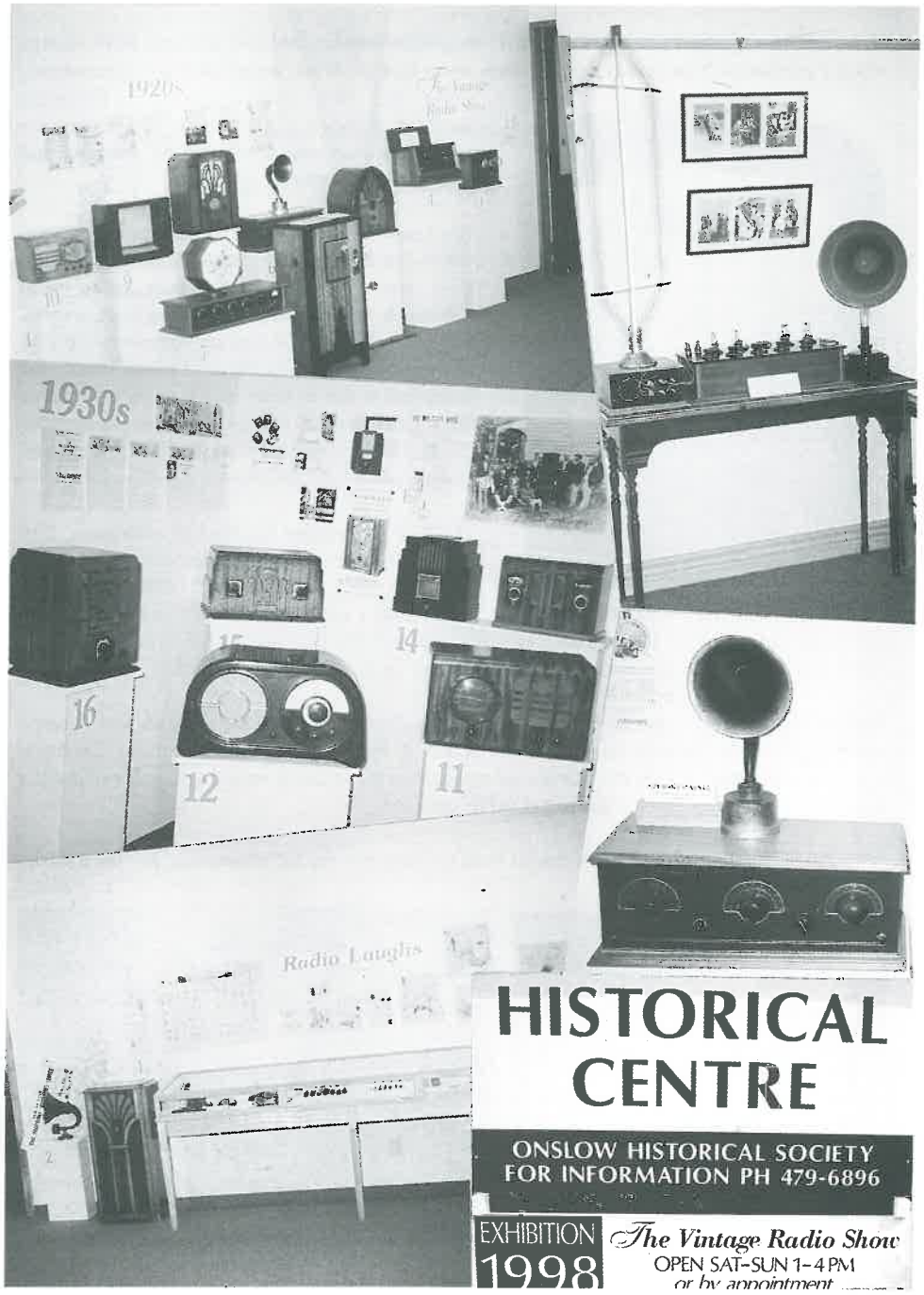
Another RCA 7 valve chassis of this era in my collection uses an 80 rectifier and it has a mounting for a shield over the 80. Rumour has it that RCA heavily advertised the metal valve feature therefore a shield was placed around the 80 so that it would not look as though a glass valve was fitted into an "all metal valve" set.

Why the "glacial"? Well it took me so long to complete the refurbishment, the pace of the job was as fast as a glacier!





Left: -T6-1 chassis Right: 7V RCA of same era showing the shield base below the 80.



VINTAGE RADIO DISPLAY

Onslow Historical Society, with the cooperation of Wellington members of the NZVRS, is running an exhibition of vintage radios at their Society rooms 86 Khandallah Rd., Wellington. This could be a 'must see' for NZVRS members visiting Wellington as it will be maintained until late this year.

Many of the exhibits belong to local NZVRS members with some coming from Melody Farm Music Museum. The displays are all domestic radios ranging from crystal sets to consoles and have been arranged in groups under their period of manufacture, spanning 1920 to 1950, or their particular classes (e.g..portables). Some of the displays are shown opposite.

Congratulations to the Wellington Branch on this initiative which helps to bring a public awareness of the Society's efforts as well as providing older members of the public with a chance to indulge their nostalgia.

SOUTHERN STALWARTS REVISITED

The originals → Peter Lankshear, Ian King, Arthur Williams (first in this picture)

In January 1998 Arthur Williams, Ian King and Bill Bird mounted their yearly radio display at the Edendale "crank-up". This is an old machinery live day at Edendale in Southland. Good publicity for the Society and 'golden oldies' radio collecting in general.

Behind the display are from left to right, Elizabeth Sangster, Arthur Williams, and Bill Boyd (partly obscured by the horn speaker).

CAN YOU HELP?

1. MYSTERY RADIO Gerry Billman of 10 Gladwin Rd., Epsom, Auckland (Ph 09/6256568) recently acquired the interesting old cabinet with speaker pictured below and is hoping that someone can help him identify it.

The cabinet, just under a metre high, 400mm deep and 400mm wide, is very plain except for the elaborate speaker fretwork and has two screw terminals on the top rear which are unmarked but could be for antenna and earth connections. There are three dry cells wired in series inside with leads that go via thin cotton covered wire to the top of the cabinet. The two wires connected to the horn speaker unit are also attached near the top compartment.

It does not appear to have ever been used as a gramophone cabinet as there are no signs of gramophone fittings and no hole for a winder. The top is fixed so it appears that a radio of some sort was fitted in the top compartment. The speaker unit is marked as follows:

TYPE 2.P 2000W
"HEZZANITH"
Heath and Co Ltd New Eltham
LONDON

2. REPAIRS TO AVOMETER. Cliff Dittmer of 8 Hobson St., Levin (Ph 06/3682902) has an AVO model 7 test meter which he has used for about 40 years. It is reading low on AC Volts ranges and he seeks help in correcting the problem. He has a circuit and will pay expenses.

3. LIBRARY REQUIREMENTS . Ernie Hakanson, our librarian, seeks circuit diagrams and/or information on the following radios to help in satisfying requests from members.

RADIO CORP models 50(1935), 5H, 5V, 6 (1931), 6A (1932), 6V, 7A (1932), 8A (1932), 12 AC/DC (1946), 14R, 40 (1939), 40S (1939), 53R, 53S (1946), 55S (1948, 56 (1942), 056 (1940), 56A (1941), 062 (1950), 69V (1938), 75XA (1940), 90W, 90X(1949), 91P (1955), 91R (1955), 104 (1943), 166N, 166M (1952), 166P, 166R (1950), 201 (1946), 207 (1933), 306 (1931), 402A (1948), 402Z (1951), 509 (1959), 521 (1957), 525A (1960), 810S (1959), 812S (1959), CQ73 7V D/W.

AKRAD models 4B3. 6PP, 6P3, 611, 1053, 4B, 5B1, 104 (1934), S42, S43, S44, S46, S47, S48, S49, S50, S52A, S30, S35, S36, SP37S38, PE8U, 7G4, 7B1, 5I7, 5I8, 5I9, 5I2, 5C9, 5M7B, 5W5, 5W3A, 5W6, 5VBC, 5W0, 6Bs, 6VBC.

ULTIMATE (RADIO LTD) models OK 5V 1934, VS 5V BC Rolls, XB 1933 Skyscraper, VC 1934 5V, RR CV 1947, BZS 1936, CQU 5V, CYS 6V DC BC, BXU.

COLLIER & BEALE models 6AV, 8LSB, 549AB, 618P, 620, 726RG, 951A, 6253RG, 6255, 7150E, Berwick (radio tuner), A14.

If you can help by supplying one or more of these circuits you will be assisting fellow members in their hobby. The Society will pay reasonable copying and postage costs. Send your contributions to Ernie Hakanson at 17 Williamson Ave, Grey Lynn, Auckland

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NZVRS 1998 ANNUAL GENERAL MEETING
Summary of minutes

TREASURER'S REPORT: Year to date: $2000 reduction in the bank account (largely produced by the purchase of a new photocopier for $3000).

ANNUAL SUBSCRIPTION: Set at $15 on motion of T Duxbury, seconded B Marsh. Carried

ELECTION OF OFFICERS: The following officers and committee members were elected - President - I Sangster, Secretary - G Lindsey, Treasurer - D Crozier, Committee, D McDonald, P McGechie, R Paton, J Hutchinson, C Schollum, M.Hall and R Cook.

MOTION. That the new constitution be accepted and presented to the Registrar of Incorporated Societies. Proposed R Osborne, seconded P McGechie. Passed with one dissenter.

GARAGE SALE

A garage sale will be held at 1 pm on the 31st of May at 3/475 Blockhouse Bay Rd. Buyers and sellers welcome - Refreshments available.

should have included Bob Cook's name, otherwise it could have been mistaken for a Society sale

LETTERS TO THE EDITOR

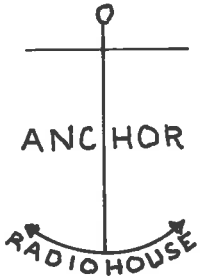
REPRODUCTION OR FAKE

I read with interest the David Read article in your February issue (p16). As prices climb for the more collectable sets, replicas, reproductions and outright faked sets are becoming more common. I would like to share my knowledge in this area because I believe that offshore collectors are taken advantage of more than collectors here at home. I believe this is especially true of collectors in countries that don't have an Indigenous supply of American sets to have familiarised them. The following list specifies the faked radios and the country of origin that I have personal experience with. As long as the reproduced items are represented as such, faked radios or parts can be a plus to the Hobby. Hopefully this list will encourage collectors to be very careful of this merchandise. It is by no means complete.

Radio type	Degree of faking
Catalin (USA)	Reproduced Trim/parts Reproduced cabinets (simpler designs) Repaired cracks or damage deliberately hidden Catalins which have chassis fitted to cabinets originally fitted with air cleaners
Round Ecko (UK)	reproduced cabinets in colours other than black or brown fitted to an original cabinet. Complete Reproductions of Chassis and cabinet of Masonite. Produced in various colours by Gerald Wells. Easy to spot, still in production and never originally intended to be pawned off as original
Repwood Mickey) Mouse.	Another reproduction by Jerry Wells, never originally intended to be confused with the original. The beginning collector may be tricked.
Mirrored Sets (USA)	Non original colours for Sparton Mirrored sets. I've seen these in green and gold. There may be other colours and makes. Made up mirrored sets. I have seen mirrored sets made from Philcos, Arvins and Spartons among others. Faked Spartons. There are quite a few Sparton BlueBirds made up from chassis and reproduction parts. If you see a BlueBird with a brown inked dial it is made up from other sets.
Novelty sets (USA)	Faked Pilot Lone Ranger. This set was only produced with a Bakelite cabinet. If it is wood it is a fake. 36 German Olympics Bosch. I don't know if this set was ever made but the several I have seen were fakes.
Chrome plated sets (metal cabinets) (USA)	The only original chromed set was a Silvertone metal made by Arvin. These sets are easy to spot because they still have paper labels on top of the chrome.
Pre 1930 sets (USA & UK)	The relatively low tech sets from this period lend themselves easily to faking. I have seen reproduced Audions, Detectors, AK Breadboards, parts and labels. metal tags, front panels, complete Crystal sets and other items produced from scratch. At the prices generated from the Ford Auction a few years ago I wouldn't be surprised if someone is turning out Marconi items.

PS The Emerson double dial Tombstone on page 18 (Feb. issue) was made by International and sold under the name "All Wave Duo". These sets were surplused to Emerson and Lafayette among others. To my knowledge only two of these sets have surfaced in the States in the last 25 years.

Bill Moore, USA



IZH

I was very interested in your article in the bulletin (Vol 18/1) about George Anchor. I used to listen to 1ZH which used to come in with plenty of volume when I was living in Te Awamutu. I have a collection of over 100 sets including an Ultimate A.W.Radio in immaculate condition which was one of George's sets. On the top of the cabinet there is a motif which I have depicted. The model is B/C/U/

Harold Ault.
Kawhia

(The above letter dated 5/5/97 was mislaid - apologies - Ed.)

RADAR

I am after two more copies of the bulletin volume 18/3 as I wish to send them overseas to acquaintances whom I know will be pleased to receive them. The article on the "Development of Radar in NZ' is a classic and I am pleased that it has been put into print for posterity.

Arch Hiscock.
Pukekohe

BILL ILLINGWORTH

I recently disposed of a number of radios including one built for my late father by Bill Illingworth. I had to rebuild this 1925 set from its remains. It was similar in many ways to a Browning Drake and used four Mullard PM series valves; RF, regenerative detector and two AF stages.

Bill was certainly one of the pioneers of radio and broadcasting in Auckland and for many years ran the transmitting station of 1ZB when it was located at Waterview. I remember that my father had the contract to protect that radio station against possible bomb attacks or the like in the World War II period. This job involved constructing a double wall around it with split Douglas Fir saplings about 6 to 8 inches in diameter. The saplings were specially milled and sawn in half, I believe in Rotorua. The "wall" had a spacing of some 3 feet between the inner and outer timber layers at the base and I think tapered to about 2 feet at the top which

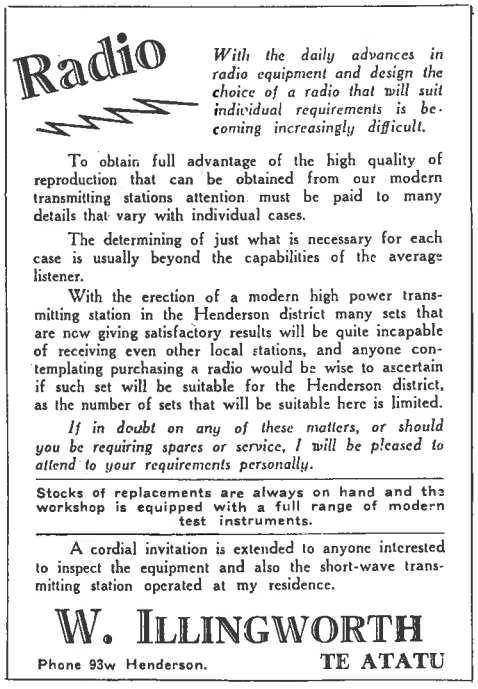
reached just over the height of the transmitting building. The structure ,was tied together with long specially made steel rods with nuts and washers.

The core of the wall was filled in with earth using a wheelbarrow and shovel. Ramps of imported Oregon timber were laid to the top with a lengthy run to give a manageable slope. The barrow was pushed UP the planks and the soil tipped into the cavity with one person pulling a rope tied to the front of the barrow and jumping clear at the top while the pusher tipped the load. Shades of the old slapstick comedy can be imagined. Sometimes with a bit of dampness or mud on the planks or boots the load did not make the top. Lyle Rogers sometimes managed to push the barrow load up the planks unaided in gung-ho style but didn't always make the top either.

However, no Japanese gunfire or bombs attacked 1ZB so this was, I suppose, later demolished.

Was that the "good old days' ? Who would ever do a job that way today ? obviously nobody. Mechanised diggers and machinery were simply not available and the job had to be done somehow with what was at hand - Manpower!

I have discovered a copy of a picture of Illingworths Post Office and Shop in Te Atatu Rd., Auckland together with what must have been an early newspaper advert for Bill and his radio services. - perhaps someone older than me may be able to date the picture.



11 Carnegie St
Westlake, Q.

Jack Whittaker
Australia

PS Noticed in an Electronics Australia publication a programme schedule for 2BL or 3LO, I think, that "W. Illingworth" was to speak on the care of teeth. I think this would probably be the same Bill Illingworth (a man of many talents). Does anyone know about this. ?

see also my write-up 18-3-28

Book Review **by Reg Motion**

AN INDEPENDENT AIR by Jim Sullivan

The story of the Otago Radio Association and 4XD

For some time now I have been looking for a member to put together the story of the oldest radio station in New Zealand in order that we might publish it and record for posterity the history of this remarkable station claimed by some to be " The oldest radio station in the world" and the "First radio station in New Zealand". I was wandering down the main street in Dunedin recently and what did I see but a display of vintage radio parts advertising a book by Jim Sullivan on the history of 4XD. No need for me to seek any further. Jim had, in his usual thorough manner, put together and published a well researched book commemorating the 75 years that the station has broadcast - a remarkable performance considering that until 1989 it has no commercial income being entirely run from donations of money and time.

Jim starts from the beginning, when, in 1921, Professor Robert Jack with his assistant, Jack Sutherland, built and operated an experimental broadcasting station in Dunedin then introduces "Toots" Mitchell who, starting as secretary/treasurer in the original Otago Radio Association committee, was to play a leading part in the early development of 4XD (then licensed as 4AB). From the start the Otago Radio Association grew strongly and with the help of Jack Sutherland its equipment took shape. Jim Sullivan describes these early efforts and test transmissions leading up to the opening broadcast early in November 1922. This was a gala occasion .

The struggles to find operating finance for broadcasting were well known throughout the country at that time and Dunedin stations were no exception. Jim writes of the means employed to raise funds and the friction which developed between the the "official" stations , 4YO and 4YA, and the "experimental" station 4AB. Eventually these problems were sorted as the government honed its policy on broadcasting and the Otago Broadcasting Association was allocated a new callsign, 4ZB.

During the 1930's the callsign 4ZB was taken over by the newly formed Commercial Broadcasting branch of the government system and the Otago Radio Association station became 4ZD. Then in 1938 the government endeavoured for the first time to buy the station and put it off the air. The Otago Association resisted and the battle continued for a few years until the government gave in . In 1948 the station became 4XD and remains so to this day.

Programming of a broadcasting station is of obvious importance if it is to capture public audience and the Otago Radio Association knows this only too well. In spite of its lack, until recently, of official or commercially derived funds its programmes have always been interesting . A large part of the book covers these programmes and the personalities who broadcast as well as the volunteer staff who made the broadcasts possible.

The book is soft covered with 42 pages, liberally illustrated and at its modest price is a very worthwhile buy . It is published by the Otago Radio Association, P.O. Box 404, Dunedin.

FROM THE LIBRARY

The following are extracts of articles from vintage radio magazines received by the NZVRS library. Photocopies of these articles are available at $1 each plus postage from the librarian - Ernie Hakanson, 17 Williamson Ave, Grey Lynn, Auckland. Phone 09/3766059

98 The windpowered Astors. 32V Radios. Astor HMQ and QN. Photos, circuits, description. . HRSA Radio Waves No 60, P36, April 1997.

99. Wallace Maton - pioneer of radio relay. history, photos. Radio Bygones, issue 47, P4, June/July 1997.

100. Radios of the Rising Sun. Prewar Japanese sets and wartime developments. history, photos. descriptions. Radio Bygones, issue 47, P7, June/July 1997.

101. Garrard Memories. History, servicing experience. Radio Bygones, issue 47, P12, June/July 1997.

102. Nuvistors, Compactrons, frame-grid and quick-heat valves. diagrams, history, specifications. Radio Bygones, issue 47, P13, June/July 1997.

103. The Pye 'Export'. Pye models 1101,3017 & 1112, descriptions, circuits, photos. Radio Bygones, issue 47, P18, June/July 1997.

104. A Telsen 1-V-1 revived. description, photos, circuit. Radio Bygones, issue 47, P28, June/July 1997.

105. Vintage Audio Recorders - the evolution of a book. descriptions, photos. Antique Radio Classified, Vol.14 No.7, July 1997, P4.

106. The Splendid Receiver - Variation on a Theme. Senior Model III, photos, circuit, description. Antique Radio Classified, Vol.14 No.7, July 1997, P8.

107. Cone "Ship Speakers". photos, descriptions. Antique Radio Classified, Vol.14 No.7, July 1997, P10.

108. Hoyt Electrical Instrument Works. History, photos, description. Antique Radio Classified, Vol.14 No.7, July 1997, P14.

109. Book Review. "Evolution of the Audio Recorder" Van Praag. Antique Radio Classified, Vol.14 No.7, July 1997, P21.

110. The Atwater Kent Model 40 in a Pooley Highboy cabinet. Description, photos, restoration. Antique Radio Classified, vol 14 No 3 March 1997 P6

111. Early Weston Laboratory Type Tube Tester. operation, photos, Antique Radio Classified, vol 14 No 3 March 1997 P18.

112. The Edison Lateral Series - Three CDs. reproductions on CDs of early Edison diamond cut discs. Antique Radio Classified, vol 14 No 3 March 1997 P20.

113. Noise-Reducing Kinks for the Auto-Radio. Early work in this field. The Horn of Plenty, Vol 18 No7 July 1997.

114. Broadcasting Seen Through RCA Eyes. A 1922 report on the scene in USA. The Horn of Plenty, Vol 18 No7 July 1997.

115. The Grimeton Dinosaur. description, photos of 200kW, 17.2 kHz, Alexanderson alternator station in Sweden. Radio Bygones Issue 48, Aug/Sept 1997, P5.

116. Projection Television Receivers of the 1950s. photos, descriptions. Radio Bygones Issue 48, Aug/Sept 1997, P12.

117. Japanese Transistor Radio Mini-History.
photos, descriptions, history. Radio Bygones Issue 48, Aug/Sept 1997, P16.

118. Photography for Collectors. lighting, film, backgrounds, exposure, focusing. Radio Bygones Issue 48, Aug/Sept 1997, P20.

119. A Lafayette HE-30 Revived. history of Lafayette with photos, circuits, restoration. Radio Bygones Issue 48, Aug/Sept 1997, P25.

120. The SCR-584 Radar Unit. photo, history. SCARS Gazette, Vol 22 No3 Aug 97, P7.

121 Atwater Kent Metal Radios. restoration hints. SCARS Gazette, Vol 22 No3 Aug 97, P16.

122. The $12 Antique Radio. detailed hints on restoring decrepit radios. SCARS Gazette, Vol 22 No3 Aug 97, P21.

123 The Manufacturing of the Zenith Consoltone. factory test reminiscences. SCARS Gazette, Vol 22 No3 Aug 97, P28.

124 The De Forest Reflex Radiophones(D10 & D12). photos circuit description. Antique Radio Classified, Vol 14 No8, Aug 97, P4.

125. Three Radio Auctions. photos, prices. SCARS Gazette, Vol 22 No3 Aug 97, P16.

126. Early Television Gear at the AWA Museum - photos,- descriptions. The Old Timer's Bulletin, Vol 38 No3, Aug 97, P30.

127. The Communications Receiver: National Notes: a continuing series on restoring the HRO, photos, descriptions, history. The Old Timer's Bulletin, Vol 38 No3, Aug 97, P36.

MARKETPLACE

Advertisements for the next issue must reach the editor by the 18th July 1998. Ads should be either hand printed or typed on a separate page. Note that 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: Reg Motion, 2A Hazel Terrace, Tauranga, New Zealand.

AVAILABLE

Dial windows made from 0.5mm PVC for following radios. AWA 37,38,51,52,92, Astor Mickey Mouse, Aristocrat 1947, STC mantel 150-250, Airzone 458 mantel, Radio Star +452,453,569,550, Mullard 50 by Airzone, Philco 1940's 41-40, Radio Master console; above @ A$13.50. Airzone Symphony Leader, Airzone pushbutton, Weldon 537DW, Healing Scales @ A$18.50. All prices plus post and packaging. Richard Boyd, 14 Portsea Place, Castle Hill 2154, NSW. Ph 02/98994529. Mob. 041 2283082.

Russian 'Red Star', 'Navigator and 'Colonial Globe. Yellow/red and Maroon/yellow Fada "Bullet'. Addison A5. Circular Ekco Jackson Bell 'Swan' and 'Peter Pan'. Sharp Chinese lacquered 'Pagoda'. Classic Portobar. Sonora Cadillac. White Sonorette (hairline). 1920's Gecophone #2 crystal set (others). Fellowphone 2 valve. Westinghouse Aeriola. various horn speakers. Pilot Super Wasp. Philips 830, 834, 634, 630, 636, 2811. Bush TV32. Will trade for '20s Marconis, Philitone speaker. interesting crystal sets, Radiolette and 'Scales'. Simon Wade, Finchcroft, Broadwater Down, Tunbridge Wells, Kent TN2 5PE. Telefax (44) 1892 543505.