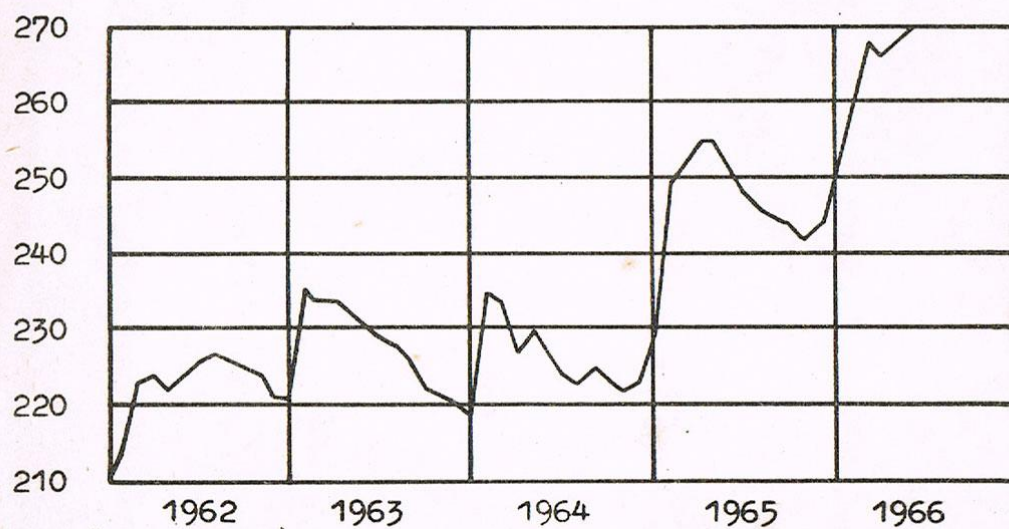


RADIO INFORMATION BULLETIN

NEW ZEALAND POST OFFICE

SEPTEMBER, 1966



Number 19

COVER

Our cover graph illustrates the growth of the radio technician staff since 1962.

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1. From the Radio Section, Wellington East.
2. From the Whangarei District.
3. From the Auckland District.
4. From the Rotorua District.
5. From the Palmerston North District.
6. From the Wellington District.
7. From the Christchurch District.
8. From the Dunedin District.
9. From the Invercargill District.
10. Next Issue.

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1. RADIO SECTION(a) Mobile Services

While the growth of land mobile services has been retarded by a lack of base station and associated equipment dominion totals for July 1966 still show a substantial increase over figures for July 1965. The totals shown below incorporate all channels operating at the 51 base stations throughout the country; equipment in use at the numerous Post Office fixed control stations is not included.

	<u>Channels</u>	<u>Subscribers</u>	<u>Mobiles</u>
July 1965	424	1,837	11,475
July 1966	469	2,153	13,543

Supplies of new base station transmitters and receivers (Pye) are being acceptance-tested at the present time. The bulk of the units which are substantially the same as the existing type RT and RR 6201 equipment will be tested at the factory by two members of the Auckland Radio Depot staff, Messrs W.W. Turvey and D.F. Blackburn. The loan of staff from Auckland for this work is much appreciated.

Various items of test equipment ordered under the 65/66 Purchasing Programme are now being received and following acceptance-testing, distributed to the various radio depots. While most of the items intended for use on mobile services are similar to units previously supplied, a quantity of a new test instrument consisting of a high power wide-band amplifier has been purchased to facilitate the remote testing of base station receivers from all Radio Depots. The condensed specification for these amplifiers is as follows:-

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Frequency Range	10 to 500 Mc/s in 6 bands:
3db bandwidth at	>700 kc/s (10-150 Mc/s)
Nominal tune frequency	>1.4 Mc/s (150-500 Mc/s)
Output Power (in 50 ohms)	0-4 watts (deter- mined by level of driving signal)
Output metering in	.2V to 3V F.S.D. (across 50 ohm)
(3 ranges)	1V to 10V F.S.D. (across 50 ohm)
	2V to 30V F.S.D. (across 50 ohm)
Amplifier Gain	30 db (10-250 Mc/s)
	27 db (250-400 ")
	24 db (400-500 ")
Noise figure	6 - 8 db
Modulation	None provide, driv- ing signal has to be modulated
Mounting	Cabinet or 19 in. Rack
Dimensions	Height 7 3/10 in. Width 19 1/2 in. Depth 17 11/16 in.

To permit these amplifiers to be driven up to the full output power by existing frequency meters, ancillary 2-unit panels are being constructed in the Development Workshop. Each 2-unit panel will contain:-

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- 1 0-100 db switched attenuator
- 1 40 Mc/s mobile band filter
- 1 80 Mc/s mobile band filter
- 1 100 Mc/s mobile band filter
- 1 150 Mc/s mobile band filter
- 1 10-300 Mc/s wide-band transistor amplifier
- 1 230V AC to 12V DC power supply.

In addition, coaxial terminations will be provided for aeriands and equipment associated with the testing of remote base stations.

(b) Technician Services

General depot inspections are well under way. Whangarei, Auckland, Invercargill and Hamilton have been done and Christchurch Himatangi, Dunedin and Blenheim soon to follow. General Services Subsection has inspected Rarotonga and Niue Islands. The Land Mobile Subsection has completed inspection of Depots at Hamilton, Rotorua and Napier with Blenheim, New Plymouth and Palmerston North soon to follow. Trunkline Subsection is having difficulty getting their programme rolling but hope to have completed Hamilton and Auckland before Christmas.

- (i) With the withdrawal of the Hamilton - Rotorua 48-channel HM100 equipment from service the opportunity was taken to establish a school at Hamilton using this equipment. We hope to get about ten staff members through before the equipment is required for Taupo-Turangi in December.

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- (ii) P.G. Allott has been temporarily transferred to Palmerston North from Hamilton to initiate the first HM100 school at Hamilton.
- (iii) Because of heavy staff commitments at S.H.F. and HM100 Trunkline Schools, relief has had to be provided from Head Office for Dunedin and Awarua depots.
- (c) Training

The new common training scheme is now well under way, with trainees attending courses at Auckland, Wellington, Petone and Christchurch.

Because of rather low figures achieved in recruiting (1966) some of the earlier schools have not been as full as was initially envisaged. (See graph for general trend in recruiting). The rate of progress of trainees through Stage I, excluding English, is also having some considerable bearing on the arranging of schools. Notwithstanding this, the courses that have been run, have been very satisfactory, particularly the Stage IV series held at Petone. 36 trainees have so far attended these latter courses.

It is also appropriate to congratulate Roger Hoy, Peter Plimmer and Murray Lambert on their success in the first R.T.C. examinations. 63 of our staff have entered for the 1966 November R.T.C. examinations and this gives a fair indication of how the new certificate is being received. In proffering candidates our good wishes for success in these examinations, we would like to offer a word to the wise - don't be complacent about these papers, particularly Radio C.

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(d) General Services

Activity in the General Services Subsection has been at normal level over the past few months, the usual day-to-day problems from all over New Zealand being taken in our stride. Slightly out of the ordinary were:-

Inspection of Rarotonga Radio

At the end of May, Terry Govenlock and Bob Bundle left Wellington by Bristol Freighter for Auckland where they left early next morning by R.N.Z.A.F. Hercules for Rarotonga. Stops en route were made at Nukualofa, Paleolo, (Western Samoa) and Nandi (overnight) before arriving at Rarotonga. Just over two weeks were spent on the island and a thorough inspection of the Radio Station was made during this time. A report is being prepared at present, which will be submitted through the Island Territories Department to the Cook Islands' Government; it covers all aspects of maintenance and general condition of the station and will make recommendations regarding future expansion of the station, and its services. Terry and Bob returned to New Zealand by the MOANA ROA during June after a pleasant change from the normal daily routine of Radio Section.

Testing of S.S.B. Equipment

Some time ago quotations were invited for the supply of S.S.B. transmitter/receivers for Emeradio use. Some doubt was expressed after tenders had been considered as to whether the stability of what appeared to be the most suitable offer would be satisfactory. To enable this to be evaluated and to obtain some practical experience in operating the equipment it was decided that some field tests should be conducted. Nelson, Westport and Greymouth were

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chosen as the sites from which tests would be carried out to Wellington, and early in July, Bob Bundle flew to Nelson with the necessary equipment, including an aerial. Tests to Wellington were most satisfactory from Nelson and later from Westport, Greymouth and Christchurch. Ray Stark took over the testing from Westport onwards when it was necessary for Bob Bundle to return to Wellington in a hurry. The superiority of S.S.B. over A3 transmission was remarkable; on a number of occasions A3 was unreadable while the S.S.B. cut through qrm and grn with little difficulty. It is likely that the few Emergency Radio Stations which are to be retained will shortly be provided with battery-operated S.S.B. transceivers to replace the old faithful 4110 transmitter/receivers.

Maintenance Visit to Niue Island

Bill Glavin left Auckland by the TOFUA on 18 August to undertake the biennial maintenance of radio equipment at Niue Island. Bill called at Suva, Pago Pago and Apia before arriving at Niue on 27 August. He will spend 28 days on the Island bringing the equipment of the radio station up to scratch before catching the TOFUA to return home via Vavau, Nukualofa, Suva and Auckland. He is due back in Wellington on 3 October.

2. FROM THE WHANGAREI DISTRICT

(a) Radio Inspectors

A rather unusual case of radio interference in Whangarei, caused by unterminated channels on the Whangarei - Auckland J2NA carrier system, caused a little consternation when heard for the first time - the interference sounds very much like the electronic music used in "space" programmes on TV!

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The new N.Z.B.C. TV repeaters at Horokaka, 1 kW on channel 5 and Mt Hikurangi 1 kW on channel 3, and the change of channel for the Whangarei translator from 6 to 7, has caused quite a "flap". The dealers are busy changing aerials and, rather surprisingly, the new stations, with their high power, have not proved to be the complete answer to reception problems, and in some cases, have given poorer results. In Whangarei, for instance, the change to channel 7, vertical polarisation, from channel 6 horizontal, at much the same power from the same site, has resulted in most viewers getting severe ghosting. To eliminate this, in some instances, ten element yagis have been necessary.

One interesting feature noted is the very small difference in signal voltage obtained with channel 5, 6 or 7 aerials used for channels 5 and 7, though there can, in some instances and circumstances, be a marked variation in definition.

The N.Z.B.C. is shortly to establish a repeater station in Whangarei, to carry the national YA programme, and this will provide a notable improvement in the radio services for Northland.

(b) V.H.F. Services

Coverage tests have been carried out in the Dargaville area with a view to establishment of a P.O. V.H.F. service in that district. Indications are that two channels are required to cater for potential subscribers.

Transfer of equipment from Parahaki to Maunu Mt V.H.F. station was made in early August and subscribers should appreciate the improved coverage obtainable from the new station.

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3. FROM THE AUCKLAND DISTRICT

(a) Radio Inspectors

Contrary to the impression that the sensational press appears eager to impart, the Hauraki Gulf is not exactly swarming with hordes of radio pirates. This branch is naturally keeping a close watch on the situation.

Amongst the press furore a significant point raised by correspondent John Berry in the "Sunday News" is that a second television channel could hardly be financed with a mere £100,000. £1 million would be a more realistic figure.

Staff. It has become almost a custom for Auckland Radio Inspector Trainees, near the end of their training period, to undertake relieving duties within the Auckland Region. Whangarei has tacitly become the prerogative of Graham Crooks, whilst Rotorua has been shared between Alan Roberts and Colin Campbell, Alan finally being appointed Class IV at Sulphur City.

(b) V.H.F. Section

Work started on the facelift of the Mt Eden Receiving station including the removal of the partition between the Equipment and Engine room. Hope that this activity will include an air conditioning plant is current gossip around the Depot.

The spare set of 40 Mc/s Tait equipment held in the northern region for Transport Department service has been put into service at our Waiatarua station in the Waitakeres.

The 160 Mc/s survey has now been completed and the results are being evaluated. This

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marathon task occupied almost six months, and tests from nine stations and one field site using emergency diesel power supply. A total of 9,095 miles was covered during this period. Promising results were obtained from Pukekohe, Mt Otau (Clevedon), Waiatarua and Kraaks Hill.

The total number of reported V.H.F. radio service faults for the year ended 31 March 1966 was 2284, but of these 232 were found to be okay on test or faulty mobile sets, and 86 line faults which were referred back to the exchanges concerned. The previous year's figure was 2,179 so the incidence of faults is decreasing considering the new channels being installed.

(c) Workshops

The Pakatoa Island country set which for the past 18 months has been struggling to keep the island in contact with Auckland over excessively long lines is now operating over a new line via the Waiheke Island cable and is now direct dialling to Auckland over lines with an 8 db loss instead of the 35 db previously in the circuit. Naturally the island's owners are pleased with the new service.

The main concern of the depot now seems to be, are we shifting and when and where to. New premises are currently being investigated.

(d) Auckland Radio

Latest doings at ZLD include removing of the Telefunken DF equipment and the dismantling of the wooden tower from the top of the receiving station. The old Marconi DFG12 DF has also been removed from the receiving station and tenders have been called for the removal of the four 100ft towers from the golf course adjoining the station. The P.A.B.X. switchboard has been

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removed from the upstairs Civil Aviation section and is installed adjacent to the 500 kc/s operator in the Post Office room downstairs.

(e) Microwave Section

The 12 monthly maintenance of the Auckland-Whangarei microwave link has been successfully completed, installation or better figures having been obtained at each station in the chain. During one recent visit to Moirs Hill, a brisk unequal chase along the road resulted in the capture of a baby goat, which is now assisting a keen gardener in an Auckland Radio house with breaking in more ground in preparation for the new growing season.

(f) Staffing

Missing from the depot for the past two months is Ray Simpson with heart troubles. These unfortunately are not the youthful love ones and latest reports show an improvement in his condition as he is allowed out of bed for short periods. Amateur Radio is helping to fill in his days, so off shift hams at other stations might keep an ear open for ZL1AGP on SSB about 3.8 Mc/s. Wally Turvey and David Blackburn are at present attached to the Engineer-in-Chief's staff, Wellington, getting briefed on testing a new batch of Pye V.H.F. sets and will then be going to their factory at Waihi to give them acceptance testing. Eric Duffy is Officer-in-Charge, Whangarei (relieving) and moving V.H.F. equipment from the Whangarei station to Maunu eight miles west of the town.

Regrading proposals for the depot here are awaited with interest in view of a recent unexpected transfer to here. No doubt other branches are awaiting their regrading also, but even a regrading and a new family tree will not conjure staff from out of nowhere.

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4. FROM THE ROTORUA DISTRICT(a) Radio Depot

Two new workbenches have now been placed in their final positions which brings the present total to eight. With the addition of a further workbench towards the end of this year we will have reached the limit of comfortable working accommodation.

Our recorder's office is still vacant but we understand that a Recorder, possibly a female because of difficulty in recruitment, will be appointed sometime in the near future.

The standby call out system is now in operation at this depot.

(b) Staff

The vacant Class V position has now been ably filled by Lindsay Gibbs from Makara Radio and we also welcome Don Staples as our latest recruit, making a total staff of ten. Roger Kerr who has been with us for approximately 2½ years was successful in obtaining his C.R.T. examination in November last year. Congratulations Roger.

(c) V.H.F. Services

Mr Brian Harnett, Inspecting Technician, from Wellington, recently carried out an inspection of Urban Mobile Services in this district. It is a good thing for Head Office people to visit district from time to time as liaison by phone and memoranda is not quite a 100% method of getting information, viewpoints, and an interchange of ideas, etc.

The permanent building at Mt Kopukairoa is well under way. Boxing has now been completed and concrete ready for pouring. This building should be completed by the end of October 1966.

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(d) Microwave Section

Peter Munro popped in a few weeks ago to check microwave frequencies at Ngongotaha and Tauranga with a Hewlett Packard frequency counter. Nice to see you again Peter.

Lenkurt six monthly maintenance has just been completed at Mt Ngongotaha with both channels meeting C.C.I.R. white noise tests. A very slight adjustment of the Klystron cavity screw on the A channel transmitter being required.

The incidence of faults on this equipment is very low provided the high tension supplies are not switched excessively.

Order wire facilities have now been installed in the depot test bay and connected to the system.

All buildings on the Rotorua to Turangi Microwave and V.H.F. link are well under construction. Foundations are being poured at Whakapapataranga and floor slabs at Poihipi Road; also the underground power cable section at Mt Pihanga has just been completed.

(e) Workshop Section

We welcome the additional test equipment which has recently arrived namely, Marconi 100 watt power meter and Telequipment oscilloscope which is ideal for sweeping V.H.F. aerials in conjunction with the Kay sweep generator.

The 52 type V.H.F. Base Station equipment for Mayor Island arrived recently. This equipment will be installed at Otumoetai, Tauranga, and will replace the old 4115 transmitter and ARC 5 receiver on 2272 kc/s. The 52 set has been modified to 71.2 Mc/s at Radio Section.

[Part 2](#)