RADIO INFORMATION BULLETIN

NEW ZEALAND POST OFFICE

IN THIS ISSUE -

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VOLUME ELEVEN

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1. GENERAL

The Radio Information Bulletin was introduced primarily as a result of representations from the Districts to obtain information on radio activities throughout the country. Its continuation is dependent, therefore, as much on the districts' contributions as on the dissemination of information from Head Office.

It is disappointing that, in this issue, one district only has contributed. This is your magazine, make full use of it.

2. GRAY MEMORIAL PRIZE

The majority of you will no doubt have read that the Gray Memorial Prize for 1961 was awarded to Ralph Fisher and Lloyd Beech of the New Plymouth Radio Depot for their suggestion about a diversion of the supervisory bearer route on the Hamilton-New Plymouth-Palmerston North microwave system.

The Gray Memorial Prize is awarded each year to the best suggestion or invention that has been adopted, and the winning of this award by Messrs Fisher and Beech is, therefore, no mean feat.

Congratulations to you both.

3. SOLDERING IRON HINT

Our thanks to Norm Allen of Makara Radio for the following useful tip which he discovered in a magazine recently:-

"When the tip of your soldering iron freezes tight, merely dip the tip into a small glass of undiluted household ammonia for about five minutes to loosen it. To keep it from sticking in the first place, coat the tip with a light grease and then rub the tip in some powdered graphite. Now you can insert the tip into the end of

soldering iron. Old, but good tips can be given the same treatment. It will keep the tips from ever freezing in the ends of your soldering iron."

4. ROTORUA DISTRICT

From our Rotorua correspondent comes the following contribution:-

Many of you may not be aware of the activities of the Rotorua district. To give you just a brief picture of what goes on, we have in operation from Rotorua itself (Mt Ngongotaha Station).

(a) Rotorua-Hamilton 48-channel V.H.F.

(b) Rotorua-Taupo 5+5 channel G.E.C.

(c) Three land-mobile V.H.F. trigger bases.

(d) One land-mobile V.H.F. base for taxis.

(e) One land-mobile police circuit.

(f) Low-frequency base for the Electricity Supply (Tourist Department).

In addition, there is the Emergency radio at Opotiki and Rotorua; maintenance and installation work for the Electricity Supply trucks; radio inspectors' and Transport Department vehicles. The distance covered in fault clearance, V.H.F. surveys, etc., was some 10,000 miles last year.

Services that we operate from Taupo include -

(a) A land-mobile police circuit.

(b) The Mayor Island radiotelephone link (low-frequency).

(c) One land-mobile V.H.F. trigger base.

(d) The country set base for Motiti Island.

(e) One land-mobile base, single-frequency, shared with taxis.

There is only the G.E.C. 5+5 channel terminal at Taupo at present but the demand for additional V.H.F. services is expected to grow considerably in view of the interest being shown by the business people.

5. TRUNKLINE PROGRESS

Planning work is now well in hand on telephone traffic bearer systems for the Waikato and North Auckland areas.

The Waikato scheme will couple Hamilton to Rotorua with a 6000 Mc/s microwave bearer via two repeaters. One repeater will be situated on the top of the Kaimai Ranges and a spur route will couple Tauranga to this repeater. The same repeater may later be used for a spur route into Putaruru.

Auckland will be connected to Whangarei using 6000 Mc/s microwave via two repeaters, one situated at Moirs Hill and the other at Brynderwyn. It is expected that the Auckland terminal will operate from the new Airedale St building and the building has been designed to carry a 100-ft tower for this purpose.

An order has now been placed for the microwave equipment which will be almost completely transistorised, the only vacuum devices used being the transmitting and receiving microwave klystron oscillators. The associated supervisory system will be fully transistorised - all switching being carried out with solid-state devices.

The major advantage afforded by the transistor approach will be the spectacular reduction in power equipment required

to give a no-break supply. System operation will be direct from a 48-V battery supply with a fully duplicated 600-channel repeater set taking 20 amps from the battery.

All repeaters will be of the demodulating type which allows drop and insert of telephone traffic at any repeater without undue complication.

The equipment uses modular construction. Sets of spare modules will be supplied to reduce "on site" maintenance time. Test bays will be supplied at Auckland and Hamilton to facilitate maintenance work on faulty modules.

It is hoped to carry cut site-testing towards the end of this year and to have the Hamilton-Rotorua equipment in operation in 1963.

6. "MOTOROLA" FREQUENCY METER

Nine "Motorola" frequency meters have already been distributed and are in use. These new instruments are a refined version of the well-known "Gertsch" meter and are, in fact, made by that company. They are easier to use than the earlier model and provide a signal source and means of measuring frequencies between 20 and 1000 Mc/s with an error not greater than 2 c/s per megacycle. Quite impressive for a portable meter.

7. MARCONI STANDARD SIGNAL GENERATOR TYPE TF 867

This new instrument has a frequency range of 15 kc/s to 30 Mc/s, modulation at low distortion up to a full 100% and a calibrated output up to 4 volts. Maximum output is in the order of 6 volts.

A unique feature is the output attenuator which is a single knob controlling a slide-rule type dial some 16 inches long calibrated from 32 to 132 db referred to 1 microvolt. A divide

by 10 or a divide by 100 is obtainable by a thumb-switch in the R.F. probe.

The output is precise in terms of voltage rather than frequency although the total frequency scale length of almost 16 feet gives good dial resettability.

8. RECRUITING AND TRAINING

Thirty-one junior mechanicians have been recruited since the 1st October, 1961. This has resulted in a heavy training school programme for 1962. Seven schools, of which three are first stage, are scheduled for the year.

In addition there are four engineering cadets undergoing training on radio work as well as two lads from Samoa who are under the care of the Island Territories Department.

May we take this opportunity of welcoming these lads to the sphere of radio and to wish them well in their careers.

9. FIJIAN TRAINEE

Ed Waqairawai of Fiji has completed his 12 months' training with us and has returned home. Ed attended three radio schools during his stay and spent varying periods with the Wellington Depot, Palmerston North Depot, Carrier Room (Wellington) and the Engineer-in-Chief's Office.

A most popular fellow, Ed has made the fullest use of his time here and the manner in which he has applied himself to his duties and study has been an inspiration to many of our staff.

At a farewell function in the Radio Section, Mr R. Bundle of the Laboratory presented Ed with a small gift on behalf of the many friends he made during his stay.

NOTE.- Later in this Bulletin we publish a letter from Mr Waqairawai.

10. FOOD FOR THOUGHT

A question and answer from the Post Office Magnetism and Electricity Course -

Q. Which do you consider are more important in their applications, conductors or insulators? Give reasons for your answer.

A. This is a pointless sort of question, because if you didn't have insulators it would be hopeless having conductors, as all the current would leak away, whereas if you had insulators and no conductors you would have no possible use for electricity in any case. This is very much like the chicken and the egg - they are both of the same importance.

This lad will probably go a long way in the Department.

11. MOTITI ISLAND

From our Rotorua scribe -

Motiti Island in the Bay of Plenty is an island about three miles in length and 1½ miles in width and is the home for some 15 families. Tauranga is 10 minutes away, by air.

Communications are maintained by two country sets. The equipment is pole-top mounted on the island and is serviced by the Rotorua radio staff.

12. SITE-TESTING

Our Rotorua correspondent also writes of site-testing in the hills surrounding Taupo in connection with the establishment of wide coverage highways V.H.F. circuits. One of the tests was conducted from the lower summit of Mount Tauhara, 2500 ft above sea level, and involved two technicians, R. Holdsworth on loan

from Hamilton and B. Palmer, Rotorua, plus two line staff members from Taupo, Hoppy and Ra.

This survey was conducted using the Electro V.H.F. transceivers and involved carrying 40 lbs of radio equipment, tent fly, and food plus a 12V car battery weighing 50 lbs strapped to the steel frame of a tramping pack together with a skirted dipole antenna and coax up through high scrub and undergrowth.

A slasher was in use most of the time and the packs changed around frequently.

One of the Taupo members, of the opinion that there must be an easier way up, disappeared, carrying the aerial. No amount of calling from the others could re-establish contact with him. It was rather significant that he arrived at the summit five minutes or so after the rest of the party. This site, ironically, gave little improvement on the coverage obtained from the existing G.E.C. site in the Taupo lineyard.

A somewhat amusing incident occurred in the afternoon when a figure dressed in a gaberdine coat and complete with umbrella was observed, through the mist, to be struggling up the hillside. Eventually the figure emerged as a rather red-faced, puffing gentleman - Mr R.S. Cole had come to see how the tests were going.

In the series of tests, the Depot "Vanguard" circumvented Lake Taupo over a bulldozed power line maintenance track in the western area, mainly first and second gear work. Tests were also conducted from Mount Maranui forest fire lookout tower, located to the north-west of Lake Taupo and three miles off the Tokoroa main highway. This site had a commanding view over the country and, from the hut on top of the lookout tower (some 80 ft high), views could be had from the Desert Road to Rainbow Mountain (near Rotorua) and Mount Pironghia (near Hamilton). Much surplus weight was shed in getting four 6-volt car batteries up the steel tower, particularly on the last vertical section and through the trapdoor in the floor. However, the results of the tests from the site compensated us

for the effort involved. The coverage obtained was first class and extended from Tokoroa to the outskirts of Waiouru. Of course, natural obstructions en route prevented fully continuous coverage, but the Desert Road exceeded expectations. This location was almost unnaturally quiet and noise free.

During the tests a check was made by Hamilton depot and they could receive a signal of approximately 6 microvolts from Maranui which was fairly good for a transmitter of 9 watts on a skirted dipole antenna.

13. LAND-MOBILE SERVICES AT ROTORUA

In Rotorua considerable difficulty has been experienced over the past year with the police V.H.F. channel coverage. Numerous coverage tests were made but no firm conclusions have been reached. Some of the land-mobile subscribers regularly trigger into Ngongotaha from Taupo and Tauranga and, on one occasion, a stock transport firm claimed to have had two-way contact from near Napier. However, the police, some 30 Mc/s lower in frequency, are limited largely to local town coverage.

Tests were conducted from Ngongotaha on frequencies between the police frequency and the normal 100-108 Mc/s band. The results of the tests indicated that the optimum in the band checked was around 90 Mc/s. From the base station at Ngongotaha the police can work to Tauranga and Hamilton under normal conditions so the effect experienced is purely local.

14. MICROWAVE AND MARCONI 48-CHANNEL LINKS: STAFF TRAINING

Palmerston North is to be used as a training centre for refresher courses for staff employed on microwave and Marconi 48-channel links. Engineering Instructions are now being prepared outlining the procedures for special courses there and showing the course syllabus.

15. LETTER OF APPRECIATION

The following letter, which we publish in full, was received from Ed Waqairawai on the eve of his departure from New Zealand:-

"Apart from the fact that it is rather difficult for one to fully express one's thoughts in so many words, I am being handicapped by a further obstacle, namely, "English". However, I shall attempt a brief outline of why I've come to be in this country and the impression it has given me, for the benefit of those I have been unfortunate not to have met.

I was sent across by the Fiji Post Office for a year's Radio course with the N.Z.P.O. The wintry night of June 5th, 1961, was the first experience I had of "Kiwiland" after only a few hours departure from the warm, sunny shores of Fiji. Being a total stranger in a strange country, I was both amazed and deeply touched when helping hands were extended to see me safely to my destination. This was only the beginning; as those hands kept on unceasingly throughout the thirteen and a half months of my stay in New Zealand.

My studies have kept me in the strict vicinity of Wellington up to February of this year when I was attached to the Training Section of the Palmerston North Microwave Stations; I have, therefore, been unable to "see" the country. However, I was so engrossed in the training, etc., that I've decided to see it through regardless of all else - it was my one golden opportunity.

I shall not be able to make any comparison as my "radio-world" is of a far smaller scale. What I have seen in the various sections of the N.Z.P.O. I have been attached to were in themselves major points well worth every effort. To me, they provide countless, priceless informations - vivid reminders of the advanced state of this country in such a field and, doubtless, of great value to countries such as mine. To keep up with the

pace of progress, the Fiji Post Office has strived a fair distance in the past year and, I am certain, that the valuable coaching given to our boys by the N.Z.P.O., here in Wellington, will prove firm stepping-stones to our own advancement.

What I have seen of the Department and the country have also stamped the fact in my mind of the close-fellowship and goodwill that radiate outwards without discrimination; the general unbiased attitude extended to strangers in your midst regardless of colour, class or creed, - this is another experience I have gained apart from Radio, and I feel certain that the rest of our boys now here will unite with me.

Finally, I'd like to express my most sincere appreciation for all that has been done for me. From the Heads of the Department to the Engineers; the Officers and Staffs of the Staffs Training Division; the Engineers, Senior Technicians and Staffs of the various sections I have been fortunate to study and work with. I thank you all for what you have taught me, your encouragements and untiring assistance. The Senior Radio Inspector and his Staffs whom I have bothered with my many problems, none of which was left unsolved. The Supervisors, Matrons and fellow-workers of the P.O.A.C. who made me feel at home at all times, I also sincerely thank you all.

To conclude, I hope and pray that the future be as good and kind to each and everyone of you as the past has been to me.

Ni Sa Moce (Goodbye)"