

R A D I O I N F O R M A T I O N B U L L E T I N

NEW ZEALAND POST OFFICE

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1. INTRODUCTION

We are very pleased to have a news item from both Auckland and Christchurch. Come on you other districts get the ball-point pens working for the next issue about April, 1962.

2. NEW EQUIPMENT FOR RADIO STATION, RAROTONGA

Rarotonga has recently received 10 sets of H.F. radiotelephone equipment (Mullard 35 watts), to replace the existing ZC1's installed on the Northern Group Islands. On the transmitter up to 8 spot frequencies may be selected by means of a single switch. The new equipment will provide improved communication between these islands and Rarotonga.

Rarotonga is also to shortly receive four G.E.C. communications receivers. The purchase of a Redifon one-kilowatt general purpose transmitter is also being arranged.

3. EAST CAPE LIGHTHOUSE - RADIOTELEPHONE

A 50-watt I.M.R. radiotelephone has been purchased to provide a back-up to the long telephone line to East Cape. When the telephone line is out of order due to storm damage, etc., weather reports, and other urgent matters can be sent via Auckland Radio on 2196 kc/s or 5865 kc/s. The equipment is to be installed by the travelling technician, Jack Piper, on the next maintenance visit, early in November.

4. MARINE DEPARTMENT LAUNCH ENTERPRISE

A 65-watt R.C.A. "Cruiseophone" has been recently installed by Roy Sutherland in the ENTERPRISE at Picton. The various stations in the Cook Strait area should observe a considerable increase in signal strength from the ENTERPRISE. Previously the launch was fitted with a type 4115 set (15 watts), which had a limited coverage.

5. TEST INSTRUMENTS: PROCUREMENT

Once again the time has come when we are about to call quotations for test instruments. A brief outline of the action necessary to provide Depots and Stations with the instruments they need may be of interest.

Firstly, all districts are circulated asking for their requirements for instruments for the next two or three years. After considerable delay, in some cases, the returns start filtering into Radio Section, where they are considered initially, and where a case is clear cut, the districts are advised of the decision. When all returns have been scheduled the overall requests are considered on a Dominion-wide basis. As the number of different instruments is normally fairly large only those being regarded as essential can be considered if the programme is to be kept within reasonable financial limits. After it has been decided which instruments should be included in the purchase, a further schedule is prepared showing the type of instrument required, the number required, reasons for the requirement and the estimated costs. This schedule is then sent to the Superintending Engineer (Radio) for approval to call quotes. After approval by S.E. (R) the schedule is returned to Radio Section where descriptions of the instruments are prepared, preparatory to the Director-General, Stores Division, calling for quotations.

A period of approximately three months elapses before the closing date for the quotations. Stores Division then receive the quotations and they are scheduled. They are then passed on to Radio Section for a recommendation. The pamphlets and other technical data received with the quotations are carefully studied in Radio Section and the recommendations are passed on to Stores Division where the actual purchasing action through the Government Tenders Board is undertaken. When the economic position is such that overseas funds must be conserved the purchasing action does not always run smoothly. In some cases the programme is cut, in other cases certain items regarded as not so urgent are deferred.

Orders are finally placed with the companies manufacturing the instruments and another period of waiting ensues. Anything over three months is the normal waiting time until the instruments arrive. They are then acceptance-tested in the Radio Section Laboratory and are sent to the Depots and Stations by the Stores Branch.

This has been written to let those in the districts know why test instruments they regard as essential, seem to be taking longer to come to hand than they think they ought to

6. 45-UNIT PYE TRANSMITTER CABINET

During the last few months there has been developed on the 4th floor a cabinet to house V.H.F. urban mobile equipment to replace the standard P.O. 45-unit rack.

The prototype was made from Widney Dorlec extruded aluminium alloy channelling with eight Pye PTC3002 transmitters mounted on modified filing-cabinet type runners and has the following advantages over the existing arrangements:

- (a) There is 100% access to the equipment from the front to allow alignment and minor service work to be carried out with the sets in the cabinet.
- (b) The equipment, being enclosed in a cabinet, is not troubled with vermin or dust.
- (c) A mains and line distribution unit mounted in the top 5 units gives ready access to the termination blocks and simplifies internal cabinet wiring.
- (d) The cabinet was designed to fit in with existing associated equipment in that it has the standard 45 units of rack space and uses type 61 filter rack and B type cable ducting.

It can be appreciated that the temperatures produced in an enclosed cabinet by eight Pye transmitters can be very high. However, the final cabinet that has evolved, using open top, one unit ventilating panels and heat deflectors beneath each set, produces convection cooling which enables the equipment to operate completely satisfactorily in an ambient room temperature of 104°F. The limiting factor can be imagined if it is remembered that the maximum internal temperature was found to be 40°F above the ambient room temperature and that the maximum operating temperature for most ordinary equipment is 70°C (158°F).

The inclusion of an 8 in. G.E.C. fan to assist the convection cooling decreased the difference between the ambient room temperature and the maximum internal temperature from 40°F to 25°F so that this cabinet should operate satisfactorily in ambient temperatures of 115°F.

Further development work is being carried out in operational conditions.

7. STAFF TRAINING

During the recent months two Radio Schools were held at Trentham. These consisted of a 1st and 2nd Stage and were very successful in that a good standard was maintained. It was unfortunate that the 3rd Stage School scheduled for October had to be postponed due to the difficulty of releasing eligible trainees.

Commencing with the current 1st Stage School the position of Assistant Instructor has been filled on a yearly basis. This change has been made to give a measure of continuity between schools and it is hoped that overall improvements will result. Brian Fanning is filling the position till August, 1962.

Readers will be interested to know that at the present time we have in N.Z. a radio technician and two junior trainees from Fiji. They are respectively, Edward Waqairawai

Pratap Singh and Mesui Kau, all of whom will be in N.Z. for a year's work embracing theoretical and practical training. We take this opportunity of welcoming these gentlemen to our branch.

During the August school holidays an effort was made to assist in the recruiting of junior radio mechanics. This took the form of employing a number of school-boys during the holidays. These youths were distributed between Wellington Radio, Wellington Depot, Makara Radio and the three sub-sections of Radio Section. It is not possible at this stage to gauge the success of this scheme. However, the majority of the boys displayed a keen interest in the work offering.

To further assist in the recruiting a number of photographs have been taken, depicting in particular, junior mechanics in training, both at the School at Trentham and at the Radio Section of the Engineer-in-Chief's Office.

8. FROM OUR AUCKLAND CORRESPONDENT

The news from the Radio Depot is mainly that we have at last moved into new premises. The Teed Street depot is a vast improvement over the previous depot in all respects.

June 12th was Red Letter day and most problems brought about by the change have now been overcome to the satisfaction of staff and management. Working conditions are now most satisfactory, there being ample bench space, and the lighting both by day and night leaves nothing to be desired.

Parking of departmental fault vehicles posed a difficult problem and the tolerance shown by the Newmarket Borough Council was appreciated in the trying period whilst negotiations for permanent off street parking were taking place.

Staff facilities now are excellent and the accommodation utilised for meals, staff lectures and training, etc., are now

such that the anticipated influx of new trainees will be able to carry out their assignments under conditions previously unknown to radio technicians in the Auckland area.

Storage space for maintenance spares has been doubled and the task of being storeman (most trying in the past) has been considerably improved.

The recent Submarine cable failure meant long hours and much organising by the Radio Workshops staff who installed three control points and three mobile units (two barges and a launch). Communication was available at all times between all the marine units and control points at the C.P.O. and Central Exchange.

The mobile equipment was battery operated and the cooperation of the Public Service Garage in making charged batteries available was appreciated as our own reserve of batteries was sorely strained over the fault period.

9. FROM OUR CHRISTCHURCH CORRESPONDENT

(a) Radio Depot

After several years of operating under very cramped conditions we are now well installed in the new Radio Depot building at Papanui. Having approximately eight times the floor area over which to spread out and with an exclusive workbench for most of the staff, working conditions are very pleasant. The Regional Engineer at the time, Mr S.M. Reynolds, opened the door and declared the building open on September 13th, 1960. Initial inspection by representatives of the trade, other Government Departments and Post Office Branches was followed by the customary social entertainment. Much satisfaction has been expressed regarding the design and facilities of the Depot but future designs should cater for much improved acoustical qualities to reduce effects of unavoidable noise level and permit monitoring of Radio channels and telephone conversations with reasonable ease. Authority has since been gained for the fitting of acoustic tiles.

(b) V.H.F. Mobile Radio

In this District we are rapidly changing the Urban Mobile Radio Service into a Rural Mobile Service as the demand is now for coverage in Country areas. A station has been installed at Mt Horrible, near Timaru, to serve South Canterbury and one is planned for Mt Alexander, near Culverden, to give coverage of North Canterbury. Several sites are to be tested near Oamaru for a further station in that area. All three of these stations can be tied in with Marleys Hill or Mt Pleasant - the new station to replace Cashmere - giving wide-coverage of all Canterbury and North Otago. It is hoped to have Mt Pleasant started by the end of this year to give greater coverage and relief to the very overcrowded station at Cashmere and allow expansion to meet demands. A special apparatus rack has been installed in the Central Exchange containing a jack-field for all subscribers and station lines, a 45 number dial access selector, test facilities and room for miscellaneous equipment such as repeating amplifiers, transformers and impedance matching devices, etc. We are at the moment preparing a 120 ft wooden mast for erection at Marleys Hill to improve the range of that station by getting above an adjacent belt of pine trees. This District has grown from 9 channels to 38 channels in the last three years and continues to expand. The new type subscribers' unit for V.H.F. Mobile Services is in use and subscribers generally prefer it to the old and are making enquiries regarding its extension to P.A.B.X. systems. Much has yet to be done in the way of obtaining satisfactory levels for its efficient working over long lines.

(c) V.H.F. Site-Testing

Since the acquisition of a Landrover, Mt Alexander which is approximately 3,000 ft above sea level, has been tested and results show it to be quite satisfactory for rural coverage. The Landrover was most valuable in getting near the summit but all testing equipment including an engine-generator had to be packed up the last few hundred feet to the top. Even a Landrover has its limitations!! Bob Smith and David Tunnickliff spent three days on a rocky outcrop in not too pleasant conditions operating the Base equipment.

Several possible sites in the Kakanui Mts and around Oamaru have been investigated but are considered uneconomic in the meantime. Two sites at lower levels are to be tested with a view to a station in that area. It was noted that from all hills around Oamaru signals of approximately 10uV were obtained in the Mobile from Marleys Hill and good communication was possible down to 1,000 ft. This permits "tiefing in" for wide-coverage services.

Sites at Waitohi, near Geraldine and Mt Grey, near Oxford, have been tested as alternative sites under similar conditions and the results will be kept and used should the demand arise.

Site-testing, in conjunction with staff from other centres has been done at Lake Wakatipu for settlers' radiotelephones and has also been done at Lake Manapouri for a radio toll system.

(d) Chatham Islands

The annual expedition to the Chatham Islands took place in November/December of last year with Geoff Sandford and Braddon Smellie representing the Radio Depot. They were accompanied by Workshops and Lines staffs for maintenance of all inside and outside plant. Included in last year's work at the Islands, as an eleventh hour rush, was the provision of ground-to-air radio facilities for the regular air service inaugurated in December.

(e) Wellington-Christchurch V.H.F. Toll Bearer

We are at present undertaking the extensive modifications to the above system associated with the change to 3-wire rhombic aerials. To date, two stations have been done and all will be completed by the time these notes appear. It will be gratifying to have the system working at its maximum capability and conforming to a definite method of control.

(f) Commonwealth Technical Training Week

This Radio Depot participated in the Post Office display and set up a complete 2-frequency talk-thru V.H.F. land mobile base equipment with two subscribers' units connected and two mobile sets, all fully operational. An oscilloscope, as the base transmitter artificial aerial, showed the base transmitted carrier envelope. Public interest was great and very rewarding for our efforts. There was also a static display of equipment and photographs.

(g) Conclusion

The staff of the Christchurch Radio Depot are pleased to see this Radio Information Bulletin back in print again after its recess and trust that it will continue to be a means of circulating general information about radio trends and development throughout all Technician Stations.

10. FINAL NOTE

At this time of the year we from Radio Section wish all of you and your families a very happy Christmas and a prosperous New Year.