

# BREAK-IN

A Magazine Issued by the  
New Zealand Association  
of Radio Transmitters

Affiliated with I.A.R.U.

Edited by

C. R. H. TAYLOR, M.A., Dip. Jour., ZL2DG.

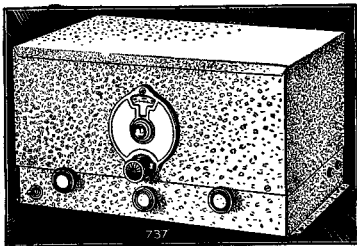
S. H. PERRY, M.COM., A.R.A.N.Z., ZL2BC

Vol. IV. No. 9.

WELLINGTON, N.Z.

SEPTEMBER, 1931.

The  
**Silver  
Marshall  
"BEARCAT"**



Is a single dial tuning All-Electric Short Wave Receiver, employing  
224 R.F., 227 Detector, 224 First Audio, 245 Power, and 280 Rectifier.

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**HEADQUARTERS ADDRESS**

is Box 489, Wellington.

Subscription is now 2/6 for new members, who will be financial to 31st December, 1931.

Letters to Headquarters should be addressed **impersonally** — Treasurer, Secretary, Editors, etc.

**"Break-In"** will not be sent to any member who is unfinancial at Headquarters.

WEAR an N.Z.A.R.T. Badge—3/6 each.

USE N.Z.A.R.T. stickers—1/6 per 100.

**SCOTT'S RADIO HANDBOOK**

This issue of a now famous handbook contains a great deal of matter interesting to the newcomer to short waves. The book is full of well-written and helpful articles and advice.

To the listener it must appeal if only for the advice on how to "break into the amateur game." To the ham it will be doubly valuable because of the A.C. receiver designed by 3AS, and a full list of ZL QRA'S supplied by our QRA and QSL Bureau. The list is complete up to the beginning of August.

**QSO-G.**

The clock in the steeple has just struck three,

The night is as silent as it can be.

A soft zephyr breeze like an infant's sigh,

Rustles the laurels as it goes by.

Then out of the silence—faint and small,

Comes the whistling note of a distant call,

And a lonely voice from some coral strand,

Wings home like a bird to its Motherland.

—Pip of "DX"

**COME TO THE CONVENTION AT XMAS.**

**POPULAR MATERIAL IN "BREAK IN"**

In April last we asked readers of "Break In" to tell us what pages they liked best to see in the magazine. Although the results have been ready for some time, we have been crowded out each month, but now space is available, and we expect members will be interested to know the consensus of opinion.

Incidentally, the Eds. learnt a great deal from these votes, for many chapters wrote at length, making good suggestions and criticism that has been very valuable.

This is the order of preference over the entire voting:—

(1) District Notes. (2) Technical Data. (3) Station Descriptions. (4) Signals Criticised. (5) Experiments Recorded. (6) Exam. Questions. (7) Beginners' Page. (8) President's Message. (9) Humour. (10) Special "Stunts" reported. (11) QSL Bureau. (12) Correspondence. (13) Imaginative Sketches. (14) New Apparatus. (15) Foreign Amateur News. (16) Book Reviews.

The placing of District Notes was far ahead of all others, having twice the number of votes of the second placed item. There were many who remarked that it was hard to prefer any one thing, for there are several that they liked to see every time. This, of course, we recognise, and endeavour to supply. A great number of members paid tributes to the quality of the mag. as at present constituted, and expressed their contentment with the status quo.

Another feature was this: non-transmitting members voted solidly for Exam. Questions and Beginners' Information; country members for Book Reviews, New Apparatus, and QRA and QSL Bureau.

Altogether we have now a collection of information that will be a valuable guide for the magazine in its future growth.—2DG.

# EDITORIAL

The result of the much discussed 'phone ballot is to hand and discloses the fact that the large majority of amateurs in New Zealand is in favour of confining 'phone stations to that portion of the 80 metre band which lies between 75 and 80 metres. This solution of a difficult problem appears to be the one most favourable to all concerned, and we sincerely trust that amateurs throughout New Zealand will confine 'phone operation to the bottom half of the 80 metre band. A consoling feature is that our American cousins have a much narrower 'phone channel than is proposed in New Zealand. We hope, therefore, that New Zealand amateurs on 'phone will remember the other chap a little, thus rendering agitation for further restriction unnecessary.

In accordance with a resolution passed at the last Convention—a resolution that each district take Headquarters duties for periods of two years in rotation—Christchurch has been asked to prepare for the task of carrying on the torch for 1932 and 1933. This action is subject to ratification by a vote of all members, and at the same time they will be asked to give to delegates to the Convention power to adopt a new and much improved Constitution that Headquarters has had under consideration for some time. Arrangements have already been made to hold a first-class Convention at Christchurch during the Christmas holidays, and all members are urged to reserve their spare cash for the biggest hamfest that has been staged in New Zealand. All districts and sub-districts are being invited to send delegates, and all will be represented, if only by proxy. As arrangements for accommodation and entertainment are already under way, members should look upon December, 1931, as the event of the year and prepare well in advance for the pilgrimage.

—S.H.P., C.R.H.T.

## BRITISH NOTES.

(From R.S.G.B. and B.E.R.U.)

The outstanding event during June was the relaying of loyal greetings to our patron, H.R.H. the Prince of Wales, from all B.E.R.U. sections. Full details of the loyal relay will be published in the "T. and R. Bulletin" for July. The B.E.R.U. Challenge Trophy has now reached Australia and arrangements are being made for its presentation to Mr. Trevor Evans, VK2NS.

During the summer months in England, many of our Provincial Districts have held conventionettes. The following centres were chosen for these meetings, all of which were well supported: Birmingham, Nottingham, Newport, Bristol, Hull, Tunbridge Wells. The Sixth Annual Convention of R.S.G.B. and B.E.R.U. will be held

in London on September 25 and 26. Overseas amateurs will be very welcome to this ever popular event. Full particulars can be obtained from our headquarters, 53 Victoria Street, London, S.W. 1.

Amateurs of Great Britain and elsewhere were very grateful to Mr. K. B. Warner and the E.D.R. Executive Council for the prompt publication of a statement outlining the results of the C.C.I.R. meeting in Copenhagen. R.S.G.B. will almost definitely be represented at Madrid, and we trust all other European countries will attempt to make similar arrangements. We are convinced that even if the National Society delegates are debarred from the actual convention meetings, it will be of great benefit if they can meet together daily and discuss matters which are to be dealt with by the Government representatives.

## QRP CONTEST RESULTS

The results of the QRP contest have been considerably delayed, and the judges beg to apologise for the delay. There was an enormous mass of detailed checking. The results are as follows:—

### Amateur Section—

1. A. R. Harris, 4CA ..... 83 points
2. J. Parsons, 2CT ..... 60 points
3. Mrs. M. Earland, 3AG ..... 53 points
4. N. Partelow, 1BF ..... 41 points

### Listeners' Section—

1. W. A. W. Stevens, NZ15W (now ZL2HR).

In order to give readers an idea of the high standard of performance in this contest, the following particulars are appended:—

The great bugbear has been the dearth of QSL's. Many chaps would have made very good showings if all contacts had been confirmed. This feature has upset the prospects of both 3AG and 1BF, despite the fact that the latter clicked six Aussies.

It is desired to congratulate the entrants on the very orderly way in which log sheets have been prepared. Particularly is this so in the case of the winner in the Listeners' Section, Mr. Stevens (since become 2HR), whose returns are a fine example of system and neatness.

The degree of accuracy in reception of code words was very high, for where confirmations were given they were almost invariably correct.

The system of allotting points was that of assuming the largest log returned as representing 100, and then marking all confirmed QSO's as a percentage of this. Thus it can be seen that 17 per cent. of 4CA's work was unconfirmed, and as this station took especial care to ensure his QSO's being reported, it will be manifest that other stations' markings are very low in comparison. All markings have been weighted according to distance.

Two logs or reports are reprinted here as being generally interesting.

### 4CA'S LOG.

Phone: Frost micro in absorption circuit for odd local QSO. 22½ V. on plate for local phone gives satisfactory results up to 50 miles. Hours of operation: 7.30 or 8 p.m. to bedtime. Sundays: 10 a.m. to midnight! Receiver: PCJ 4 (1SG det. and 2 audio). Receiving antenna: 3 yards No. 24 enamel wire onto washhouse. Transmitting antenna: points due north, with transmitter at south end. 132ft. overall.

**Conditions.**—22/5/31: A fb night, rest of 4th dist. at pictures or building QRP sets. I make "te good start." QRM nil and QRN nil. Weather overcast and gloomy. P 30.05 in. T 54 deg.

24/5/31: "A wet Sunday! Fb for radio! In morning lot of locals on. Heard several 2nd dist. on QRO, but my range (xmitter) about 200 miles until after dusk. Weather showery (at work 4.30 p-6.30 p.). QRM from 4BC until 10.30 p.m., then noise level became low and QRN rose at 11 p.m. Glass 30.01.

25/5/31: Commenced 8 p.m. Weather showery. Glass 29.70. QRN in sharp bursts. QRM in early evening 8-9 p.m. from local stns. and indiscriminate use of chopper or suchlike device. Conditions improved after 9.30 p.m., and QRM nil, QRN nil. Notice South American? Commercial station on QTC on 82 metres from midnight onwards. 2FR and 1BQ phones very good. Possible to QSO Wn. on 16.5 volts!!

26/5/31: Commenced 9 p.m. Arrived home 9 p.m. after code class at ZL4XD. Glass 27.70. WX dull. Slight QRN. QRM from phone stations after 10 p.m. Successfully raised VK3YK who stuck to me well though QRMd badly by ZL1BQ phone. Got him QSY then FB 11.30 p. to 0.15 a.m. Listened to Siberia, 70 metres QSA 5 R 9. Did some testing during QSO's on 16.5 volts, and results almost unbelievable.

27/5/31: Started up 8 p.m. Weather squally. S.W. gale and rain. Glass 29.83, and temperature 40. FB until 9.45 p.m., when 4BC started up 150 watt phone 80 metre broadcasting station and testing with 4BU, who is addicted to same ambitions. Observe that sigs. must have directional effect, as on 23rd raised 3 Wanganui hams, and sigs. uniformly QSO there. During daylight on 24th (Sunday). Raised Timaru, Ashburton and Christchurch, and results uniform.

28/5/31: Started up at 8 p.m. Weather cold, glass 30.05, temp. 48. Clear moonlight night. Conditions FB, but not many un-QSO'd stns. in evidence.

29/5/31: Started up 8 p.m. Weather strong N.E. gale. Glass 20.95. Temp. 41. Raised 2CA with QTC, and Invercargill later—4AJ—with QTC from Ak. Exbn. I gradually faded and swinging badly. Could be accounted for by antenna swinging in gale, and also that "A" battery on osc. fla. giving a "dead" reading. "B" battery reads 60 volts. Failed raise several stns. 10 to 10.30 p.m.

30/5/31: Started at 7 p.m. Weather warm. Strong N.W. gale. Glass fell to 29.05 to-day.

Static 7-10 p.m. in sharp, loud, grouped bursts as is usual here during North-westerns. Had very interesting QRC with ZL4BA. He is about mile away up the hill. As my sigs. were QSA there on 16 volts, I decreased to 10 and still o.k. I then took off "B" battery altogether, and only source of potential to T.C. 40/10 was a 6 volt accumulator, 5 volts of which heated filament and the other two caused the plate to oscillate, and I was enabled to QSO 4BA. The signal I sent was "Otago Notes," and not previously agreed upon.

31/5/31: Started about 10 a.m. Could hear ZL2CT on QRP. Raised 3AC on QRP. He reports my sigs. skipping and fading. His frequency varying about a metre at times. 6 p.m. to 9 p.m.: Plenty of QSO's. After 9 p.m. only QRP gang on air except 2AC, but unable raise him. Glass 29.30, Wind N.W. QRN nil. Called following VK's: VK7JK, VK2GY, VK3GU, VK3OC, but only raised VK3RU.

Briefly I notice that there must be a lot of power wastefully used when we are QRO. The fact that all districts were QRP at the same time is an additional advantage, and this would also be a desirable point to be remembered for future contests. Uniform QRP week should also include phone stations, or they should have a QRO holiday that week. QSO's with VK were unanticipated by HQ or they would have provided a suitable code group like "Good old digger" or "Woolloomabaloo," which would have been more acceptable than 4 cypher code words. (A VK told me to be careful with mine or I would raise a Jap man-o-war. JYFF.) Undesirable to extend contest over 7 days, because it is very exhausting. H!!

#### STATIONS WORKED IN TEST.

ZL4CA.—3AG, 2AR, VK2NS, ZL3AP, 2FV, 2CI, 2CT, 2GQ, 3CV, 4CJ, 3CS, 3CX, 4CB, 3CP, 4BV, 4BN, 4BF, 4AP, 3CY, 4BO, 1CP, 2CP, 1CU, 2FP, 4BJ, 2BS, 2FU, 2FS, 4AO, 3CK, 2CE, 3AK, 2GJ, 4CK, 1BF, VK3YK, VK3YK, ZL3CV, 2GQ, 4CI, 3CU, 4BY, 1CI, 1CR, 1CS, 3BQ, 2CJ, 3AG, 2FI, 4BU, 4CJ, 2BM, 2BQ, VK5BF, ZL2FR, 2CA, 4AJ, 4BA, 1CK, 4BI, 4BJ, 4CM, 2DW, 2GN, 3AS, 2XH, 3AB, 2FV, 2AB, 4BQ, 2CT, VK3RI.

ZL2CT.—3BE, 1CB, 3AG, 2FQ, 2BM, 1CS, 3AP, 2GU, 3BH, 2CM, 1CR, 4CA, 3AK, 1BW, 2XH, 3CK, 3CS, 2BR, 2GH, 2FI, 3AB, 2FS, 1CC, 1CT, 3BV, 1FG, 2DD, 1BF, 3BK, 3DK, 3CD, 2DZ, 1CH, 2CA, 1CK, VK3YK, ZL3CM, 3CX, 2FV, 2CP, VK2PX, ZL2BQ, 3DA, 2DW, 2FA, 1CP, 2BS, 4BO, 2DT, 3BF, 2AC, 3BQ.

ZL3AG worked 44 ZL and 2 VK stations. ZLIBF worked 24 ZL and 6 VK stations. W. A. W. Stevens, NZ15W (now ZL2HR), correctly reported 21 QRP code groups.

The N.Z.A.R.T. Shield, formerly held by R. M. Kay, ZL3CI (?), has been engraved with ZL4CA's call and forwarded to him, together with a miniature, and a miniature has been sent to ZL3CI.

Mr. W. A. W. Stevens, of Hawera, has received recognition of the part he played as a listener.

## STATION DESCRIPTION CONTEST

Between now and the end of the year, a contest that should appeal to all members of N.Z.A.R.T. will be conducted. The winner will receive a one guinea cash prize, and in the case of EACH description published, the entrant will receive 100 reprints of his article free. These will be welcome additions to QSL cards sent overseas.

Each description must be accompanied by a photograph of the station described and should be written legibly or typed on one side only. The description should not take up more than four or five foolscap sheets. The judges will be the Editors of "Break-In" and they will take into consideration such factors as interest of subject matter, literary style, and any interesting or incidental anecdotes. This is a competition that all can enter and we are expecting some very fine articles.

### HAM ADS.

Charges: 3d. per line of approximately six words. Advertise your junk for sale or exchange.

FOR SALE.—Silver-plated P. and T. type key on polished hardwood base. Key quite new, and suitable for presentation purposes; £1/15/-. Apply. HQ. Treasurer.

FOR SALE.—Transformer half kilovolt, 230 volt, primary winding only, 2in. x 2in. core, 4in. x 4in. window, 25/-. Direct current generator, ball-bearing, 500-750 volt, 200 watt, separately excited field, £3/10/-. Both in excellent condition. Write, ZLIFM.

FOR SALE 25 watt power tranny, with 500v. ct., 5v. ct., 2½v. windings, £1. Also one Pilot 30 henry 60 mil choke, £1. Nearly new.

WANTED TO BUY—Transformer and any other equipment suitable for a 75-100 watt, 500-600 volt power supply. ZLIBY, Whitford, Auckland.

HAVE YOU QUALIFIED FOR R.C.C. YET?

## PHONE BALLOT RESULTS

Following is the result of the phone ballot recently held among transmitting members of N.Z.A.R.T.:—

|   | Per cent. of total votes. |
|---|---------------------------|
| Confining all phone stations to 160 metres .....  | 5 per cent.               |
| Confining phone stations with more than 50 watts input to 160 metres .....                | 3 per cent.               |
| Confining all phone stations between 75 and 80 metres .....                               | 24 per cent.              |
| Confining phone stations with an input of 50 watts or more between 75 and 80 metres ..... | 42 per cent.              |
| No action at present .....  | 12 per cent.              |
| Discouraging operation of phone stations between hours of 6 and 10 p.m. ....              | 7 per cent.               |
| No restriction if MOPA with effective buffer stage .....                                  | 6 per cent.               |

From the above it will be seen that the majority of hams in New Zealand consider that five stations under present conditions are seriously interfering with operation on the 80 metre band. The proposed remedy, it is hoped, would tend toward better harmony between the CW man who recognises in the 80 metre band a future DX channel and the phone man who uses high power mainly, if not ex-

clusively, for domestic QSO. The action of ARRL in confining 80 metre phone between 75 and 76.9 metres probably influenced those voting in the N.Z.A.R.T. ballot. As mentioned in an editorial, our attitude in radio matters should be "The greatest good of the greatest number," and some restriction of phone stations seems necessary if we are to achieve the greatest good.

## QRA AND QSL BUREAU

This activity of headquarters is growing apace. Hundreds of cards are cleared monthly and the monthly

list of new and amended QRAs is undoubtedly of value to hams on 80 metres. All members will be interested to know that Scott's Radio Handbook (1/6) contains a complete list of ZL QRAs as supplied by the Bureau.

# Radio Value

## IMPERIA "B" ELIMINATORS

Why use "B" Batteries? Use an Eliminator and save worry—save money and eliminate those crackling noises.

### MODEL B 2

Total Output, 90 milliamperes.

#### "B" Supply Tappings:

— Neg.  
45 Volts  
90 Volts  
135 Volts  
180 Volts  
300 Volts

#### "A" Supply Tappings:

2½ Volts  
2½ Volts

(Note.—"A" Supply can be used only with "A.C." Tubex.)

SPECIAL PRICE, complete with Rectifying Tube .....

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## NEW AND AMENDED QRA'S.

- 1AC Button, C. L., 20 Tainui Road, Devonport, Auckland.  
 1BR Ferguson, G., Richard Street, Westmere, Auckland.  
 1CV MacGregor, E. L., Monaghan Avenue, Mt. Albert, Auckland.  
 1CW Woskett, H. C. A., 2 Halston Street, Mt. Albert, Auckland.  
 1CX Johnson, J., Waipoua Forest Experimental Station, Donnelly's Crossing.  
 1CY Johnson, W. A., 68 Grange Road, Mt. Eden, Auckland.  
 1CZ Smith, I. S., Felix Street, Onehunga.  
 1GA Hogg, R. W., 30 Ardmore Road, Herne Bay, Auckland.  
 1GB Wilson, L. G., 25 Park Avenue, Grafton, Auckland.  
 1GE Wilton, R. K., Esplanade, Kohimarama, Auckland.  
 1GG Eaton, R., 19 Park Avenue, Grafton, Auckland.  
 1GH Spackman, L. S., 29 Faulder Street, Westmere, Auckland.  
 1GI Hunter, S. W., 25 Ladies' Mile, Remuera, Auckland.  
 1GJ Dobbins, M. J. W., Great South Road, Papakura, Auckland.  
 1GL Talbot, J. F., 5 Carnot Street, Rotorua.  
 1GM Cuthbert, D. M., 4 Musgrave's Buildings, Rotorua.  
 2AL Chew, J. B., 811 Ellison Road, Hastings.  
 2AN Weston, M. L., Norsewood.  
 2AP Eade, A., 1 Camden Road, Feilding.  
 2AS Whiteman, V. G., Lighthouse, Portland Island.  
 2BD Mack's Radio Service, 76 Kent Terrace, Wellington.  
 2BU Donald, J. F., Pineland's Avenue, Seatoun, Wellington.  
 2CZ Ireland, A. E., Pitt Street, Raetihi.  
 2DC Wiggins, H., Racecourse Road, Waipukurau.  
 2DF Watson, J. K., 167 Adelaide Road, Wellington.  
 2DI McMahon, P. R., Box 374, Palmerston North.  
 2DO Wiffen, M. A., 23 Bomford Street, Blenheim.  
 2DP Stretch, J., 249 Ohiro Road, Brooklyn, Wellington.  
 2FX Kilpatrick, C. H., c/o C. B. Shea, Trafalgar Street North, Nelson.  
 2FY Roberts, H. R., 106 Southampton Street, Hastings.  
 2FZ Reid, D., 11 Murphy Street, Wellington.  
 2GG Brown, C. H., 15 Salek Street, Lyall Bay, Wellington.  
 2HA McCabe, H. C., 42 Adams Terrace, Wellington.  
 2HB Clinch, V. J., 85 Hawkestone Street, Wellington.  
 2HC Cassey, H., Garden Road, Northland, Wellington.  
 2HD Mathewson, T., c/o ZLC, Chatham Islands.  
 2HE Ellison, L., c/o ZLC, Chatham Islands.  
 2HG Marston, G. W., Creswick Terrace, Wellington.  
 2HJ Hampton, J. H., 95 Orangi Kaupapa Road, Wellington.  
 2HL Hill, C. P., 115 Creswick Terrace, Wellington.  
 2HQ White, L., Ladies' Mile, Eltham.  
 2HT Bradfield, A. G. S., Te Awe Awe Street, Palmerston North.  
 2HU Anderson, A. J., 29 Volga Street, Island Bay, Wellington.  
 2HV Bennett, A. R., 249 Ohiro Road, Wellington.  
 2HW Megann, T. H., 299 The Parade, Island Bay, Wellington.  
 2HX Mitchell, A. T., 15 Naughton Terrace, Wellington.  
 3AJ Blake, R. G. F., 66 South Belt, Rangiora.  
 3AO Hayman, G., 69 Cameron Street, Ashburton.  
 3BD Vincent, H. F., High Street, Waimate.  
 3BN Field, N. A., c/o Couth Canterbury Power Board, Fairlie.  
 3DB Marks, S., 35 Haast Street, Christchurch.  
 3DE Lamin, A., 104 High Street, Christchurch.  
 3DF Ball, L. F., 334 Wilson's Road, Christchurch.  
 3DI Taylor, K., 10 Norton Street, New Brighton, Christchurch.  
 3DL Smith, P. O., 264 Milton Street, Sydenham, Christchurch.  
 3DM Calvert, R., 26 Konini Street, Riccarton, Christchurch.  
 3DN Reynolds, E., 83 Cox Street, Ashburton.  
 3DO Hunter, R. P., 30 Randall Street, Christchurch.  
 3DQ Goldsborough, R. F., 19 Fielding Street, Addington, Christchurch.  
 3DR Hullett, R. W., c/o Lincoln Agricultural College, Christchurch.  
 3DW Blake, Mrs. M. H., 66 South Belt, Rangiora.  
 3DZ Moyle, W. F., 61 Ruskin Street, Christchurch.  
 4CN Peterson, A., 148 Melbourne Street South, Dunedin.  
 4CO Crocker, A. V., 34 Chelmer Street, Oamaru.  
 4DP Grant, J., Otiake, Oamaru.

(New and Amended QRA'S to ZL2BC.)

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Specialty: High-class Power Transformers and Chokes built to your specifications.

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WRITE TO ZL2AR RE R.C.C.



### RESULTS OF GUARD STATIONS' COMPETITION

Mr. Basil Adair's (ZL2GD) Trophy.

1. J. Hogan, ZL2FM—100 per cent.  
2. A. R. Harris, ZL4XE—100 per cent.; W. G. Turnbull, ZL2CA—100 per cent.; J. C. Callander, ZL4BT—100 per cent.

3. N. C. Pawley, ZL1FG—98 per cent.

The first four stations submitted 100 per cent. correct copies, and it was decided to place ZL2FM first on account of the fact that he submitted his test message on the official N.Z.A.R.T. message form. ZL1FG made only one slight mistake. The excellent copies submitted by the remaining placed stations calls for special recognition, and headquarters has decided to issue each station with a special "Guard Duty" certificate.

There were ten other entries, each submitting a very good copy of the test message, but a slight mistake here and there made it impossible to consider the question of special mention, the markings falling below 95 per cent. The received copies of the test message will be returned with the Judge's comments thereon.

Headquarters is very grateful to ZL1BP and ZL3CM, control stations of their respective districts for transmitting the test message from their districts and thus alienating themselves from the competition. Our grateful thanks are also extended to ZL2BG and ZL4AO, non-guard stations, who also transmitted a test message each.

The result of the competition proves beyond doubt that the guards are functioning intelligently, and even though all were not successful in copying an exceedingly difficult test message 100 per cent. correctly, this does not mean that in an emergency they could not function as a traffic station. In this test, repetitions were not permissible and the test message had to be received through a maze of 'phone and Morse interference which, during a crisis, would be stopped, giving traffic stations a fair chance to be of use to the authorities. Headquarters is satisfied that the guards understand the motto, "BE PREPARED."



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## THE HARMONIC MONITOR

(By Old Timer)

No amateur station is complete in its layout nowadays without a monitor of some kind, for it serves its purpose just as necessarily as either the transmitter or the receiver. Not only does it allow of continuous monitoring of one's signals, but it also makes it possible very easily to tune the transmitter accurately to any desired spot in the amateur bands, thereby eliminating interference to a great extent with other stations. But the usual type of monitor designed to work on the transmitting frequency is rather an expensive piece of apparatus, requiring careful design in layout and construction with total shielding of both the monitor itself and the batteries, and if required for more than one band, it must allow of changing coils. The disadvantages are serious for the average amateur for the shielding is expensive, the construction difficult, the batteries must be small and hence do not last long; the calibration readings vary as the batteries peter out, and the continual changing of coils is not desirable.

The use of a harmonic monitor overcomes all these difficulties for it has the following advantages which will appeal immediately to most ZL hams:—

1. No shielding at all is required.
2. The ordinary A and B batteries of the receiver may be used to operate it, although it is advisable to use a separate B (45 volts is quite sufficient).
3. Only one coil is required to cover all the amateur bands allotted, and this can, therefore, be made a permanent fixture.
4. A high C tank circuit can be used, giving much greater permanency and accuracy in dial settings, thus allowing it to be calibrated as a frequency metre.
5. Checking the transmitter's frequency on the receiver is accomplished quickly and readily by dead-beating the monitor's harmonic with the receiver.

6. Reversing this process, the transmitter can be tuned quickly to any given spot in the band.

There is one disadvantage only—it is advisable, though not necessary, to use with the monitor a single stage of audio to give the required R6 to R7 signal. Without it the signal strength is rather too weak, about R3 to R4. However, the additional junk—an old audit trannie and a 201A tube is well warranted, for the audio stage separates the headphones from the detector unit, thereby lessening any tendency towards capacity effects.

**Construction.**—The monitor is constructed exactly the same as an ordinary two-valve receiver—detector and one stage of audio (less an aerial coil), but both the grid condenser and grid leak of the detector are omitted, the wiring of the tank circuit going direct on to the grid. The tuning coil and reaction are designed to tune from 150 to 175 metres, using a high C condenser—preferably a combination of a fixed condenser of about .00025 permanently wired across the grid coil, and a variable of .0001 for tuning purposes, this idea giving a much better band spread. On a 2in. former, 24 turns grid coil and 12 turns reaction will be sufficient.

**Operation.**—The monitor is operated permanently on the 150-175 metre band, regardless of the band the transmitter and receiver are on, and its harmonics are utilised for monitoring purposes and frequency beating. A good type of tuning condenser will permit it to be calibrated very easily from well-known commercial stations by dead-beating with the receiver. It is a good plan to use the headphones with the D.P.D.T. switch to throw them from the receiver to the monitor and vice versa quickly as transmission and reception alternates.

Now, gang, get the junk gox out and give it a trial. Once used it will always be used, and there will be better sigs., less QRM, and no out-of-band operation.

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### From The President's Chair To Members of N.Z.A.R.C.

In the early dawn of man's life upon earth his mental development was upon a fairly low plane. Probably only the actual members of a family lived together in a cave or other natural shelter easily protected from the attacks of animals or other enemies. Perhaps a number of families would be living in a group of caves: kinship would be but a weak tie, but the value of numbers for offensive or defensive purposes, together with the proximity of food supplies, were doubtless the factors which started community living.

Skipping to periods when population became dense, the identity and liberty of the individual were gradually subordinated, more or less, to the needs of the majority by the formation of rules and regulations—or laws. An able writer could paint pen pictures illustrating the many phases covering man's recognition for system and also regulation of his actions

where they come into contact with others. Complete unity, the ideal, has never been achieved, and it is therefore natural that differences of opinion should occur even amongst a section drawn together by mutual interests.

In our own Association members have combined zealously to build a united brotherhood of amateur transmitters, knit together for the common good and thereby to the benefit of each and all. The difficulty which deeply concerns a number of us is that of finding the best solution to the question of the use of Morse and 'phone on the 80 band. Can we approach the subject in a manner which will end in evolving a solution satisfactory to most members. If some of us were called upon to arbitrate for another country's amateurs we would undoubtedly study the views of all concerned, weigh up the pros and cons and then make a careful decision. We all become "hot under the collar" at times, but if we could suppress the personal element and consider the various features from a detached point of view, we should be

on the correct road to success in overcoming a difficulty and this will rebound to our own credit.

I have had the privilege of meeting quite a number of both the older and the younger members of our excellent and growing organization and have always been impressed by the

fine spirit of goodfellowship which exists and am therefore confident that the members will, when they have put their heads together find that the solution as at present indicated by the membership voting will be for the ultimate good of all.—HAROLD BROWN (ZL3CG).

## BEGINNERS' PAGE

The following typical questions as asked in the examination for the Ham ticket are reproduced in the hope that they will assist some of our younger non-transmitting members to face the R1 with confidence. The beginners' page has been neglected of late, as we have now no correspondent sufficiently willing and capable to do the work regularly.

vantages and disadvantages?

(8) The anode supply of an oscillator valve is 25 milliamps at 400 volts. What current will flow if a 5-ohm aerial is coupled to the oscillator, with an efficiency of 40 per cent.?

(9) State the formula for working out the capacity of a condenser, giving as an example suitable numerical values for a mica type of grid condenser for a receiver.

(10a) What are the various causes of the radiation of harmonics?

(10b) On what occasions do the harmonics from an oscillator prove useful?

(11a) When inspecting the characteristic curve of an amplifying valve what governs your decision as to the correct grid bias to use in conjunction with any particular anode voltage?

(11b) What points are considered when deciding on a suitable anode voltage?

(12) Given a condenser of 100 picofarads capacity what value of inductance would be required for a resonance at 7,000 kc/s.

(13) What bands of frequencies may amateurs use? (a) When first obtaining a license. (b) By special permission after having gained the necessary practical experience?

(14) What precautions have to be taken as to the secrecy of correspondence? What news matter received by radio is allowed to be "published."

(15) What procedure would you follow if you heard a distress call?

(16) If you were advised that you were causing interference (of any kind) what action would you take to remedy the matter?

### Specimen Examination Questions:

(1) Draw a schematic diagram (including the power supply), and describe the operation of the set you propose to use.

(2) Describe the construction of a "dummy" antenna, and explain how you would use it when adjusting and testing a transmitter.

(3) State the purpose and operation of the grid leak in a valve transmitter. In what way and why does the value of the grid leak affect the reading of the anode milliammeter?

(4) Give three methods of modulation used in radio-telephony, explaining the one most commonly used for high quality output.

(5) Define the following terms: (a) mutual conductance, (b) saturation current, (c) amplification factor, (d) space charge, (e) anode impedance.

(6) Describe an absorption type of frequency meter and explain how you would use it to measure the frequency of an incoming signal?

(7) How is a "peaked" audio-amplifier constructed, and what are its ad-

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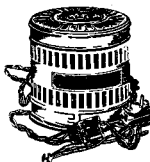
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**HEADQUARTERS PERSONNEL.**

In view of the fact that a vacancy has occurred on the Headquarters' Executive Committee, it has been decided to appoint Mr. J. K. Hooker, ZL2DQ, to fill the vacancy. Although a new ham, 2DQ has a thorough theoretical knowledge of electricity, especially AC, and working, as he does, in the hydro-electric branch of the Public Works Department, he keeps his knowledge up to date. He is also a product of the Engineering School of Canterbury University College, where he studied for some years. Throughout the past months 2DQ has been helping with "Break-In," and we take this opportunity to thank him for the able assistance so willingly given and to welcome him into headquarters.

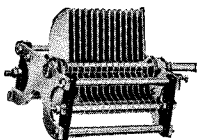
**LETTERS TO THE EDITORS.**

Dear Sirs,—As I am a member of EAR (Spain), I am, therefore, in close touch with all Spanish activities. If any ZL hams hearing EAR stations will drop me a note the information will be forwarded promptly to Madrid.  
--ZL2GO

**FIRST DISTRICT NOTES.**

**Auckland Notes.**—A noticeable feature of this month's doings is the increasing number of fone stations on the air. Whilst some are all that can be expected, others could still do with some improvement. Quite a number of new stations are now heard on the air, and, generally speaking, the sigs are of a high standard, both as regards quality and operating.

1AO is off all bands BCL. QRM is the cause, so there is not much time in between. 1BA has at last realised his ambition. A new QRA with AC laid on. Say oms QRX for QRO. 1AR is still able to click with a W or two almost any evening. 1FN is on QRO now. With 100 watts of FB fone, Bill can QSO VK on phone (perhaps!) 1AA states he is too QRW with work to come on at the weekends as usual, but it's a good job somebody is busy. This also goes for 1FJ. IAE is off the air, but is still able to talk radio. He'll soon come back—they all do. 1CG is getting a kick out of hammering the brass.



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(Telegraph "Fear")

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ICK puts out a good sig, but the phone needs a little more filter yet. ICS is still QRP with .06 watt, but can still raise a few in spite of it. 1BP is one of our regulars, along with 1BF. Jack says he can't get enough at work so he carries on at night. 1BD is strangely silent, although he was seen with some mysterious parcels. Perhaps a little surprise for the boys. 1AN manages to spare an occasional Sunday afternoon to look up old friends on the 80 metre band. 1BC phone still continues to be heard throughout ZL and also receives reports from VK. 1AV is on now and then with his little outfit. Frank can certainly use that side-swiper. 1AY will be heard again now as he is lo-order of the day. 1BH is rebuilding of this later, when results are the 1BE is building a phone outfit. More too much work and one has to go, while. 1BB is selling out as he has cated at his old QRA again for a tions being FB.

very FB. Tests with 1CH, both stan-an authority on portables. 1BQ phone 1BI is seen about a-good bit. Jim is so as to be ready for the summer DX. 1CA is working DX at a good pace 1CE is on the air between trips. Tom is the chief engineer on a coastal steamer and he certainly appreciates his radio.

Several new Firsts will probably be heard by the time these notes appear if the RI is not too hard on them. A noticeable feature is the number of hams engaged in the trade up here. The following are engaged in the trade one way or another: 1AA, 1AC, 1AO, 1BB, 1BC, 1CR, 1FX, 1FO, 1AN, 1BI, 1FN, 1AE, 1FP, 1BA.

The local meetings have been well attended and some fourteen new members were made at the last meeting.

The lecturettes by the local boys at the BCL stations went over very well and are a feature to be looked forward to. So far the YLS have not invaded the First District, although some are pretty well running some stations. It is the general opinion of



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the Auckland gang that "Break-In" is better than ever now, and they are unstinted in their praise for the Wellington HQ.—ZLIBE.

**Papakura Notes.**—We welcome to our ranks Mr. M. J. Dobbing, of Great South Road, Papakura, who has been successful in passing the examination for his ticket. His call sign is ZL1GJ. He is using 750 volts B batt. on the plate of a B 406 in a split Colpitts circuit, but before long he expects to be on the air with a push-pull outfit with plenty of kick. ZL1BV is off the air temporarily owing to the difficulty in obtaining valves. Hopes to get them, however, within a few weeks. There are several other keen enthusiasts who are intending in the near future to sit for their tickets. In their number are included: Messrs. G. Evans, I. Cox, S. Ensor and F. J. Walker. We wish them the best of luck in their endeavours.—ZL1FV.

## SECOND DISTRICT NOTES

2AA has not been heard for some time. 2AB is not quite satisfied yet with the MOPA experiments—can't keep the oscillator dead steady while keying the amplifier and thinks a buffer stage the only cure. Worked a couple of "Yanks" on 80 metres last month and got QSA 4 R5 on the old self-excited set. 2AC must be polishing up the outfit for the DX season. 2AP putting out a good sig for QRP. 2AR has rebuilt his outfit—TPTG this time and much better results. 2AW maintains a good phone standard, but weaker on account of skip conditions. 2AX—nuff sed, just listen to him, 5 p.m. Sundays on his N.Z.A.R.T. broadcast. 2AY waiting for return of DX to warm up the xtal. 2BA heard occasionally work VK stations. 2BC gets an hour or two at the week-ends to forget about editorials. 2BE is not on so regularly nowadays—too much QRM in Hastings, Jim? 2BG still pounding away on 20—sometimes heard with FB sig on 80. 2BI is very busy swatting at present, but will be

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back at it again soon. 2BM has a great punch for his QRP power—aims at output rather than input. 2BQ has good phone, but wants to clean up the carrier a bit. 2BR is on occasionally --make it more, Ken. 2BX remains on 20 after the elusive DX. 2BY now has three transmitters on deck—CC, MOPA, and TPTG—uses each in turn, night about. FB, Chas. 2BZ where are you these days om? DX asking for you. 2CA doing good guard work on 80, and works VK stations after skeds are over. 2CC must be giving the motor-gen. a rest. 2CE not heard very much this month—seems to be concentrating on phone with 2CJ and 2GJ. 2CI knows how to handle traffic—how the MOPA om? 2CL pounds the brass at home and monitors the phone at 2AX. 2CO maintains contact between Gisborne Branch and Headquarters. 2CP has received his 40 permit to conquer fresh fields. 2CR puts out a hefty sig and well modulated phone. 2CT is still QRP, but knows how to raise VK. 2DG heard every Wednesday on guard skeds. 2DW daily keeps log on 20 metre sigs., and is sending in a report to "Break-In" shortly on 12 months' observations on that band. 2DS is heard regularly—great rag chewer. 2FA puts out a very QSA sig on 80, but sometimes you would not believe it to be MOPA. 2FC is seldom heard on the key—relies on the mike to do its stuff. 2FI works VK while "Sleepy Hollow" sleeps. 2FM has a good sig and a good fist—great stuff to copy. 2FR has two operators—one for the CW and one for phone, and between them they keep things busy. 2FU has the DX bug. 2FV handles the key nicely—ought to be a guard station. 2FY gets a great output from his 210 in MOPA rig—only 30 watts input on the PA and a sig. like a kilowatt station. Excellent phone too om. 2GC is heard occasionally—one of the best operators in the game. 2GE not heard lately, must be on holiday. 2GH prints the ham cards and plays with QRP phone in his spare time—excellent modulation. 2GK has a FB portable MOPA on deck—building a C.C. out-

fit which promises to rank among the best. Both 2GN and 2GW have thrown out the slops—installed mercury vapor rectifiers—both re-building at present, 2GN MOPA and 2GW push-pull. 2GP going GRO next month—very busy swatting at present. 2GZ has a remarkably good sig. and good phone for QRP.—ZL2AB.

ZL2FU, our local pirate hunter and sozzle shifter, is now a confirmed DX hunter also. Chas's first week on 40 netted him a K and AC. FB Chas. om. ZL2CJ, Maurice's new transmitter makes your mouth water. It comprises a xtal oscillator on 160 metres, a xtal oscillator for 3,500 KC, a screen grid buffer stage, a stage of 5 watt amplification, a stage of two fives in push-pull and the linear amplifier comprises two fiftys in push-pull, making five stages in all for either 160 metres or 80 metres. He also has a fist full of xtals, so that he can QSY when on 80. ZL2GJ, a partner in crime with the above-mentioned gentleman is also a devil with the ladies. Has been on the job with the aid of Handy's Handbook and plenty of QRL and turned out a very FB. P.P.T.P.T.G. It sure looks the berries and works well. Ken also knows how to modulate the outfit and his phone is very FB indeed. His DX on 40 is excellent. It is uncanny to see Ken dragging in the W's one after the other in season. Say, Ken, how are you and 2DS getting on with the bed-making championship.

ZL2CE, of Giles Park, Wellington, has something wrong with his heart lately, slight flutter or something, and is not on the air much. How about selling me a 280 Bernie? His new QRM factory consists of a xtal controlled 4 stage MOPA, the final amplifier being a 100 watt affair which looks well and works better. ZL2GP. halt! stand at ease! Cappy has donned his riding round-me-houses and is back in the Army again. The captain is now an expert on wave traps, telefunken, modulation, duplex telephony (next door DX, hi!) and slop rectifiers. ZLF's ethereal adornments have now taken on a Jacob's ladder

appearance. How did you get that Irish fellow ZL2FM in the Army, Wally? Have you got something on him, hi?

A certain ham in this town had the photographer up at the shack on a recent Saturday afternoon, but the QRM from some visiting hams made the photographer nervous. Have you heard Charlie's FB phone? 2BY comes in very well indeed in Wellington. Keep it up Chas. ZL2GH, Norm also has some FB phone, which is consistently good. Norm must be a very versatile om. What with cards, work, and radio, plus the little hoppers, Norm must be very QRL. ZL2GU a P. and T. operator has his transmitter on the Kelburn heights with QRP. His phone is also FB. Welcome to the happy QRM village om.—ANON.

**Gisborne Notes.**—General meeting of N.Z.A.R.T., Gisborne Branch, was held in the Club rooms at 8 p.m., on August 4, 1931. President Richards was Chairman. ZL2—DX, FE, FB, DM, DF, Mr. Farlain, B. Terry, W. Bullivant, J. Small, King, C. Pavarino and R. Nolan were present. Excuses for non-attendance were handed in and accepted. The subject of outstanding subscription was discussed and the Treasurer was asked to give a statement at the next general meeting. Members donated apparatus for the Club's receiver and it was decided to assemble the parts at a future meeting. Code practice will be given at all meetings from 7.30 until 8 p.m. by ZL2DX for the benefit of non-transmitting members. There are about eight more new hams budding forth in Gisborne now so look out for QRM. There is still plenty of room left for new hams. Just a word about QRM from phone stations. We have stations 2DM, 2DW, 2FF, 2GQ, working on phone, and 2DX, 2FA, 2FE, 2FD on CW. All stations are situated within a very small radius. A question rose on having to control QRM and as a solution to the matter, wave-lengths were allotted to the respective stations as described in a previous issue of "Break-In," with the right to shift half a metre up or

down. ZL2FE is to check up the wave-lengths with his celebrated wave meter and report at each general if stations are off frequency. So much for business. Gisborne once more comes to the fore through our old reliable ZL2AC, who again carried off the winning score for New Zealand in the International Traffic handling contest held early in the year. He amassed the enormous score of 5668 points, having worked 154 stations in eight U.S.A. and nine Canadian districts. We wish to congratulate ZL2AC most heartily. Although we know he can't help it, hi! ZL2GD has not been on much lately as he has been very QRL with the saxophone. ZL2GQ is now FP27 the official Air Force station for Gisborne. He has just completed a midget portable seeing that midgets are in vogue and the accumulator and 120 volts "B" batteries are all contained in an old Crosley portable cabinet 1ft. by 1ft. by 8in. He has plans for some tests from planes at an early date, so look out for FP27 on 44m. During several week-ends ZL2DM built himself an MOPA and results are excellent except for the AC hum, hi! He is now going back to the good old Vallaurie with two UX210s in PP and two UX250s in Heising modulation. What has become of the Board of Directors lately? Haven't heard you 2FY, 2CR, 2BY, 1BE and 1CI ZL2DW hitting the high spots on 40 metres. Reports results, NG, but promising better conditions later. He is using grid modulation at present and is doing very good work. Skeds with 4CL. ZL2DX gained some 30 points in the recent VK Second District contest and says, "Let there be more of these contests." He recently received reports from BRS 245, BRS 250, and RK 1583 in Vladivostock, Siberia, on 40 metres ZL2FA, old "George" is still on MOPA with 100 watts on a 50 wattter and has FB sig, too. Scored several points in VK contest, but was QRL with service work. ZL2FD and 2FB are yet to come. ZL2FC haven't heard you much lately, Arnold, old boy. Maybe it's that confounded golf again, hi. ZL2FE is using TPTG with about ten watts input to a 245 and his PDC

sigs. are very consistently heard. Keep it up ZL2FF ! Cliff is shifting QRA and a new studio and operating room is coming up in the lift for 2ZJ. 2FF says his BC Ant. is gonig to be a half-wave 250 metre job. He is using MOPA and has a 250 watter to go in the final stage. Now you know where the kick is coming from. Well, cheerio, everybody.—ZL2DX, via ZL2GQ and ZL2C0.

**Taranaki Notes.**—Our numbers are quietly increasing and we have now a very nice little bunch of "Hams" to keep up the name of the cow district. If any of our notes sound a bit strange, it will be only the blare of a strayed calf. Hi! 2BV and 2AM, nothing heard yet. 2HR is having a good measure of success at Hawera with his QRP. Keep it up Arthur. 2HQ, a new comer. Welcome to the gang, Les, and we wish you success. 1AL, Ron Bartrum, Stratford, is back again, but says he has lost the call and is waiting for a new Second District one. 2DN still keeps the tubes warm, though he misses the 20 metre DX since that band has died off. He keeps busy on 80 with guard and other skeds. 2DD has the phone bug and is playing about with Heising. Comes in well here. How's that modulator tube, Jack, that one without a name? Hi! 2CB at last has managed to make a noise again. Glad to hear you on again, Fred., and don't worry about a bit of hum. Just stay on the air and it will disappear. Stratford will soon boast another "Ham" station as one of the local boys sat for his ticket recently. Skip effects have been very noticeable in evening lately.—ZL2DN.

#### RAG CHEWERS' CLUB.

2AR reports that 1CI and 2HR have already qualified for membership with 35 and 45 minute overs. The certificates have already been printed and make FB wallpaper. 2AR requests hams to send 2d. in stamps so that the certificate will not be blemished in the post. We want 50 members before Christmas. Who will be the next?

## THIRD DISTRICT NOTES

**Christchurch Notes.**—3AB is working VK, and an occasion W on 7mc. besides his guard stn. work. 3AC is going to be a flash phone station soon. 3AD is putting out some FB phone on 2MC. 3AF is working at night, so is not on very often. 3AG won a Philips' full-wave rectifier tube for being the best Third District Station in the recent QRP contest. 3AJ has changed his QRA. 3AK is occasionally heard using phone on 3.5MC. 3AM is back at his old QRA in Christchurch. His UX245 is labouring with 525 volts, 100 MA on the plate. All the Hams close to him have to close down when he goes on the air. Hi! 3AN is working DX on 14MC. 3CP would like a few tips. 3AP says that Christchurch is of one hard to raise at night on 3.5MC, showing that skip distance is making itself felt on this band. 3AW needs a frequency meter to keep him in the 7MC band. 3AZ is trying for DX on 7MC, but can only raise VK. 3BC recently visited Christchurch, and found his way to that "ham's home from home," the shack at 3BZ's. There he met 3CX, of Ashburton, and 3CP. 3BD is a new ham in Waimate. 3BE is working on 3.5MC, and thereby confining 3CK to 7MC. Hi! 3BF, whose aerial is on a tree, lost it three times in recent gales. Put some guy wires on the tree, Ernie. Hi! 3BG is busy arranging another dance for the RSC and NZART. 3BJ is talking of having two TC04/10s in push-pull, to raise that elusive bird, DX. 3BM has been heard using code, so 3CP apologies for previous remarks. Hi! 3B0 has a new job at Lincoln College, and has a new call, 3DR, to use at the Col-

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QSO with 3AB. 3CK has altered his aerial, with the aid of our champion lege. 3BO will still be heard at week-ends. 3BT has a car, so radio is given a back seat. Hi! 3BW is often heard on phone. Quite good, for his power, and loop modulation. 3BZ has bought an 80 foot mast, and is talking of QRO. Going to give 2BE a shock, Ron? 3CB has a portable transmitter on his ship, and puts out a nice sig. 3CC is in Australia, and has been tree climber. 3AM. The new skywire is 132 feet long, and 50 feet high. 3CK is thinking of two 50 watters in push-pull, driven by a MO and buffer stage. Wow! 3CM is kept very busy with his skeds. 3CN is getting good reports on his phone, except from 3CP. Hi! 3CP after listening to 3CN on 3.5MC, fled in despair to 7MC, and from there to 14MC, in hope of a QRM—less QSO. Vain hope! So now a totally shielded recvr, with SG RF stage, is being built. 3CT is another of the boys talking of QRO. So there is some money in the country. Hi! 3CX sold his transmitter, and took a lot of gear home from Christchurch for a new one. 3CY, heard on the air as

LL3CY, puts out a good DC sig. on 3.5 MC. 3DB, so rumour hath it, uses his receiver AF amplifier as the modulator of his transmitter. Why waste the det. tube, Sol? 3DK has a new transmitter, a push-pull TPTG. He uses ham radio to keep in touch with his people in Dunedin, FB. That's a better use than some hams put their sets to. 3DP is on the air at last. He lives near 3BZ. Nuff sed. Hi! 3DQ is a new Christchurch ham. Get her perking, OM. 3CK says he is not sending in notes this time, as there is nothing special to report, and he doesn't want to duplicate my notes.—  
**ZL3CP.**

**West Coast Activities.**—ZL3AX and ZL3BV helped the local P.O. during a recent gale; all lines were down and they were requested to get in touch with a centre to advise the position. ZL3BR was promptly raised by ZL3AX, who was at ZL3BV's. ZL3BR immediately got in touch with the R.I. ZL3BV's Xmitter was used, power being supplied by ZL3AX's dynamotors. ZL3BQ is a MOPA artist and can neutralise a xtal to a cat's whisker hi.

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Having trouble with his antenna, but can get R7 in VK, so not much wrong. ZL3BU is helping 3BQ in his spare time and is also assistant operator at the local talkies. Thinking of getting a lend of 3ZE's power supply.

ZL3AG is still hunting cards, suggests a YL branch of N.Z.A.R.'s, with separate notes in "Break-In," so that they can discuss the fashions, etc., Hi. She clicked with Peggy of 4CL, and how they can yarn.

ZL3BV about to break forth again. Has been learning all about broadcasting and their ailments. 3ZE, which is the call of his broadcast station has just been finished by 3AX, who was responsible for this super station.

Reports to Schaeff's Garage, the home of 3ZE, would be appreciated.

ZL3DD is busy building his power supply. Having a little trouble with it.

ZL3DH can be heard on QRP, and is thinking of going up on higher power soon as he can't reach out on QRP.

ZL3AA is another MOPA artist, and can be heard with a nice steady note. Has a brother operator without a call who was operator at 3AA lately. Second operator has a FB card which measures 18 inches by 12 inches, and is good only for keeping out draughts. Hi! 3AA is starting a grocer's shop with his brother operator as an assistant, so any HAM will be able to borrow a little "sugar" from him, Hi!

ZL3BC was over the sunny coast lately. He visited 3AG and 3AX. His visit was too short as we had no time to celebrate the event properly.

ZL3CW, our phone merchant, has been off the air lately owing to sickness. He fell at work and cracked a rib so had to lay up for a while. Then he changed jobs so has been quite busy. He is missed by his North Island coppers.

ZL3BB still complaining about the conditions which have been pretty poor here lately. Heard him asking the cost of a 2KVA transformer, so watch out hi!—ZL3AX.

## FOURTH DISTRICT NOTES

**Dunedin Doings.**—July was a very varied month as far as radio conditions in this part of the world were concerned. Conditions were "freakish." Climatic conditions, too, were very varied. Severe frosts and low temperatures during the first week, heavy westerly winds with a low barometer, bringing the various forms of QRN which predominate during N.W. winds here, occurred during the second week. The third week was noted for our worst snowfall for 30 years, causing shorting of zepp feeders and tube overloading. The 27th July was noted for an extremely intense magnetic storm which caused severe QRN, resembling an acute power leak and causing needless castigation of the power supply authorities, hi! A low barometric pressure varying from 29.30 inches on the 14th to 29.19 on the 26th, was, I believe, the cause of the phenomenal skip effects observable on 3.5 band. On occasions no South Island stations could be raised but great DX was obtainable, VKs being had for the picking. Among the W stations heard on the 3.5 band was W1 MK on 76 metres broadcasting messages to QST at 4.15 p.m. N.Z. time—100 per cent. readable.—Ole R.P. at key.

The fourth week of the month was famous for the VK2 tests. VK2OC, 2NS, 2QR, 2JZ, 2KW, 2HU, 2AX, 2DP and 2JT, being most consistently heard and worked locally.

4AP was most successful with the Aussies, his total being 41 in and 40 out; the result of QRO, deep concentration and sustained effort. Needless to say the Otago gang are hopeful that he will annex the Enzed prize for there is no reason why Otago should not hold the QRP Shield, win the Aussie test prize, and win the guard station competition! Up North we understand that they reckon Otago gang is slow, but are we not the

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"goat's galoshes" when it comes to competitions?

The Cameron Clan packed up traps and transmitter, and proceeded to Karitane for their holiday, coincident with the N.S.W. tests. Karitane is noted for its favourable receptive potentialities. The "bag" was a good dozen, which was very creditable for a portable medium power (210) outfit.

4BK using an \$52 has an odd try-out on the various bands, just to keep the cobwebs off. One of 4XC's messages in reply to a VK test message, went something like this: "Enzed

hams are allowed to use phone on 80 metre band provided it does not interfere with BCL reception." Personally he never uses phnoe. Perhaps some of our local gang will sit up and take notice and use an adequately filtered power supply before attempting phone work.

4XE has returned from the snowy south after a holiday with a portable set using power when available and batteries at other times. Conditions were excellent. He had a nightly QSO with 4CL (who always got the news home to Mrs. 4CA), worked 64 ZLs and 52 VKs on 80 metres in a

fortnight. On one occasion, when Waipori power failed he supplied power to light a 21 CP motor headlight to light the shack, run a four-valve receiver, and a QRP transmitter simultaneously. Cap it? With the aid of 4BV he has erected a 50-foot pole and is getting up a full-wave 150 metre antenna. 4CN comes on the air with a MOPA outfit, and a very nicely filtered signal. He is a junior op. at ZL4ZM and has a penchant for phone. His well modulated broadcast was at first mistaken for a harmonic from Beggs. However, he has made good by linking up with our ever-increasing gang. Another new member is Mr. Bill Sargeant, of Kurow, who hopes to negotiate the exam. at an early date. The more the merrier.

The code class continues to make good headway, Frank Denford having gained his ticket. He is fixing up a shack and soon should have a 'mitter going. In a try-out the other night the result of an impromptu test showed: Batchelor sends 12 good, receives 10 fair; Booth sends 11 very good, receives 9 very fair; Barron sends 9 good, receives 8 fair; Cockburn sends 9½ very good, receives 7 average; Morrison sends 14 fair, receives 5 fair. One feature is the much improved sending, thus proving the wisdom of each member of the class having to do his bit at the key for the edification of the instructor and the education of his co-learners. "Need for spacing seems to be the most urgent point to stress, for all lads are inclined to get the bit 'tween their teeth and bolt regardless of quality. Remember that the world sit listening to you when on the air but if you have a bad fist the "OM" will say "rotten," and pass you by. 4BX has the job this month of providing additional notes, for in future, each members must be prepared to contribute to these columns. 4BY will be followed by 4CK for September and 4CI for October. 4BT has found how to put out a xtal sig. from MOPA. Has about 90 watts input and we suspect about 90 watts output. 210 Osc. 852 amp. Grid blocked keying. Sep-

arate power supplies.—ZL4CA.

4XD's transmittre is now well on the way after a hold-up, owing to some of the members purloining the apparatus, hi, Casey om! An FB outfit, and good to look at, is being made by 4BO, who is now trying out MOPA with two 210's, later to be fed into UX852. Please don't cm, there's surely enough QRM on the band, what with the boys all on phone, and the older hams coming up from 20 and 40. All the locals are trying phone, same with Heising, but mostly on loop. Very FB, too. 4CK is about the best with loop. 4CI is better now that he has a filter in. Bad luck about that 245 om, but it will teach you not to go experimenting like that again, hi! A newcomer to the band is 4CN who soon had his Hartley going and worked some good DX. A visit was made by 4CI, 4BY, and "Cecil" to 4CN's shack, which now boasts an AC receiver—SG det and 2 audio, the transmitter is now MOPA with 171 oscillator to a 245 amplifier and a very FB little job Allan. We chatted with 2CT, Wanganui, to pass away the time, and to see if the outfit really did perk, hi! The only trouble was that 2CT took 4CI for a YL op. and caused a little rightful indignation for a while, hi! We also took a peep at the old stand-by Hartley of 4CI. When we came in a 245 was standing majestically in the socket, but when we went the old PM5X had gone back to its place. Ten volts doesn't go too well on 245s, does it, Doug., om? 4CI is another example of a ham operator becoming a qualified radio salesman, so anyone wanting a "anonitor" should just give 4CI a call. Some of you need one pretty badly, hi! We managed to have a look at 4CB's "chucker-out." Doesn't look too good, but that's nothing, what's wrong with Stan.? the old 1/8 201A given out or what? You will be losing that FB fist if you don't look out, om. 4BV also wants a new excuse, now. He has managed to get the key-clicks away. A wave trap in the BCL's set soon settled things. What's the excuse now, Mac.? 4CJ is going

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strong—first hundred cards gone with about 30 still owing. No good om—always QSL. Let's hope all those VKs do the same. Harry is having a bit of trouble with "toobs," but is now using a 201A with about 900 volts tickling the old plate—FB reports, too. 4XE took his outfit away with him on holiday, and did some FB work. The Fourth District was right out owing to skip distance. What about a lecture some night on "screw" antennae—we would all like to know more about them; also that new system of keying of yours, hi! 4BF not heard on too much lately—must have blown that bulb at the top of the old pole. Is that the trouble om? The band is not extended yet you know, om—not till 1932, so better stay in just now, hi!

The boys are all being stirred up by inspectors who don't like the look of things wired up with 32's gauge wire, so get things fixed up, oms—use .26 gauge anyway.

Not much heard of 4CC lately. I think they must be getting "windy" of all these YL ops. Stir up things, Lance, om, and let us hear that CC

PDC note of yours again. 4CK now both on key and phone—so good in fact that he managed to click with Esme 3BT. They were very formal at first, but after about three hours of pleasantries they ended up with Bill and Esme. A respectably married man, too. Let's hope his OW doesn't hear of it, or whew! Bill om, a little secret, right from T.O.M. himself—3BT is contemplating coming to our old burg soon, and 4CL is talking about such things as ham parties—any good? 4CM will also be down soon and will visit 4BJ—I should say 4CL (hi, Peg) and anyone wishing to meet him should communicate with 4BJ. 4AP is still working VK with his old QRO bottle. FB sigs om, and not too broad either. 4BA is heard still on 80—one of the best fists on the band, head and hand a FB combination, hi! 4CD now not heard at all—40 must be enough for him. 4BY is trying AC valves in his receiver, but not too good yet. We will have quite enough phone when 4BC gets agoin' with his QRO outfit. He is, we believe, one of the men who gets things done, so we hope he gets his whole outfit done (in) very soon. 4CL, 4BJ are just back from the wilds. They took a FB outfit with them, but had bad luck all the time. They worked plenty of VKs, but blew up a few "toobs" and made everything hum including a power tranny.

Our YL op. is doing well on DX and photo collecting. Has quite a book full, so oms you'll just have to get your photo taken. There is at least one worse than yours in that book. He went to sleep as the photo was being taken, hi! 4CL is now making a crystal set to be ready, when that ham party comes off. At that party we must have some of those clever yarns from 4BU, 4AP, and especially 4BU. 4BK is still experimenting with AC apparatus. He keeps an AC two-valve amplifier and tries out different detectors. 4BK is a bit gloomy these days. He was fixing a BCL's junk heap and something went wrong and away the old tubes went. Bad luck, om, especially when you have to replace them, hi!—ZL4BY.