AMATEUR RADIO

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"AMATEUR RADIO"

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Filament current*	0.29	1	1-6	3-8	1	3-25	A
Saturation current*	100	400	1500	2000	400	2000	mA
Anode voltage	150-300	200-500	800-1500	1000-2000	400-500	2000	V
Screen-grid voltage	—	—	—	—	75-125	300-500	V
Max. anode dissipation	6	10	75	150	15	75	W
Anode dissipation on test	10	20	100	200	20	100	W
Max. screen-grid dissipation	—	—	—	—	3	15	W
Amplification factor*	6	25	25	25	225	200	
Mutual conductance (slope)*	2.3	2.0	5	4	1-4	1-4	mA/V
Int. resistance*	2500	12,500	5000	6000	160,000	150,000	R
Anode-grid capacity	—	—	—	—	.001	.02	mm/F

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EDITORIAL

"The old order changeth,
Yielding place to new."
—Tennyson.

One wonders, when Tennyson wrote that now famous epigram, whether he realised what a tremendously wide application in our everyday lives it would have. Everything in this world is in a continual state of evolution yet. Can one conceive of anything that has shown such changes or had such a meteoric rise as our science of radio? It is not such a far cry back to the days before valves, yet to-day there is a valve for every conceivable purpose. Every new development seems to open up an ever-widening field of investigation and experiment. Surely our hobby is an experimenter's paradise, providing opportunities for research in any one of a thousand different phases of the subject.

But let us ask ourselves one question: Are we making full use of our hobby—are we worthy of the name of experimenters, or are we merely dabblers? Here in Australia we have every possible opportunity for research.

For instance, if a particular meter, of which we are not in possession, is required, we have the full resources of the Wireless Institute library at our disposal. At our meetings we have the chance of discussing our ideas and receiving or giving help. If we require special privileges to further our line of experiment we have the P.M.G.'s Department always ready to lend a sympathetic ear.

Again, in our magazine, "Amateur Radio," we have a means of disseminating the results of our work, and, finally, if we have not received sufficient inspiration and help from all these things, we have the magnificent trophy donated by our ever generous late Federal president, Mr. S. W. Gadsden, to strive for in annual contest.

Surely there is sufficient incentive; surely there is enough initiative amongst us to make us put as much into our hobby as we take out of it. We are proud of amateur radio and the part it has played. Let our New Year resolution be to strive to make amateur radio proud of us.

The Melbourne Centenary ("Centeenary," or what have you) celebrations are drawing close at hand, and the time is opportune for some bright ideas whereby we can utilise the occasion for some publicity both for the Centenary committee and the W.I.A.

"Amateur Radio" will find space for the discussion of any ideas mooted. In keeping with the usual VK ham spirit, it should be borne in mind that, while the celebrations are specifically confined to VK3, there is not necessarily any reason why the whole of VK should not participate, with VK3 as the fountain head, in boosting Australia and her hams to no small order.

We have a few suggestions on file, but would appreciate an expression of ideas from all VK hams, particularly those in the VK3 capital city.

Surely we can prove ourselves an excellent medium of publicity on such an occasion.

Let us have your ideas, no matter how weak they may seem to you. We can assure you they will be appreciated, and at least the good points of each will be used.

* * * *

While proofing the various notes before going to press, we noticed several stations mentioned as having their cq dx calls answered by sundry sought after "foreigners," but they were not successful in qso-ing owing to their apparent lack of a good set capable of receiving the said dx station.

Always hungry for technical data, we shall be grateful if those gentlemen having made the above comments will kindly furnish us with the details, etc., of their various receivers.

Incidentally, our "laboratory" staff is hard at work designing something special (and cheap) in the way of a "super." So far it has only reached the "draughtsmen's office," but when we do publish it will certainly be worth while.

In the meantime, "what have you" in the way of tech. data on receivers? Something ultraselective for all bands (if possible including **5** m), and **cheap.**

Heterodyne Frequency Meter—Monitor

Electron-Coupled Colpitts, with Voltage Supply Stabilisation.

BY VK6KR

Of all the common types of oscillator circuits the Colpitts appears to be the best for frequency-meter use, since this circuit has great inherent frequency stability by virtue of the low impedance paths between plate and cathode, and grid to cathode. The substantial elimination of harmonics of the oscillator, on account of these low impedance paths, contributes much to the frequency stability of this type of circuit.

Recent developments in tube circuit stabilisation methods have made available circuits which are particularly adapted to further stabilisation of the Colpitts circuit, and which, if properly applied, can be used in the construction of a heterodyne frequency meter of relatively high precision. Reference is made to the so-called electron-coupled circuit described by Dow. In these circuits the frequency stability to changes in load coupled to the oscillator, and to variations in supply voltages, is very high. The Colpitts circuit can be stabilised against variations in supply voltage over a wide frequency range much more successfully than any other circuit.

These three features—inherent stability of the Colpitts oscillator, freedom from frequency variation with applied load of the electron-coupled circuit, and small frequency change with variation of battery voltage obtained with proper voltage stabilisation—when combined in an instrument of good electrical and mechanical construction, produce a frequency-meter particularly suited to amateur use, a meter which can be compared favourably with more elaborate high-precision laboratory instruments, and which will hold its calibration.

Accuracy.

The accuracy with which a frequency meter may be read depends, among other things, upon the type of tuning dial used. No matter how stable or precisely calibrated a meter may be, its frequency setting cannot be reproduced with any greater accuracy than that with which the dial may be read.

The fundamental frequency of the meter to be described can be adjusted to fall between 10 and 90 divisions of a 100 division dial (180 deg.), spreading the frequency over 3.7 kilocycles per dial division. A dial with true vernier indicator, if both the indicator and dial divisions are accurately machine engraved, can be read to one-tenth a division, or to within 370 cycles.

Stability.

The principal factors affecting the stability of a meter of this type, as generally used in amateur stations or experimental laboratories, are:—

(1) Variations in temperature.
(2) Variations in supply voltages.
(3) Change of external load.
(4) Substitution of different tubes.

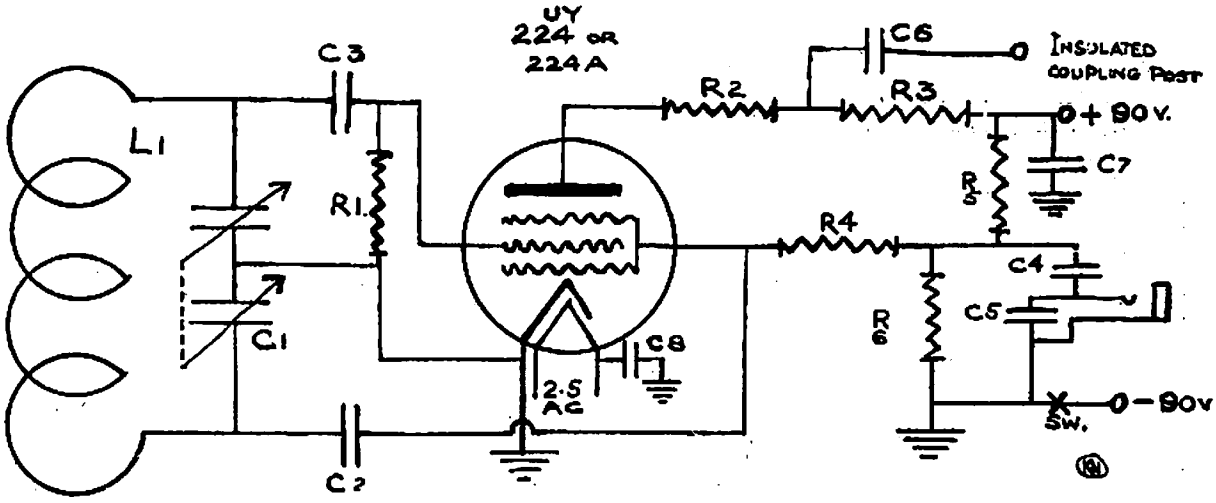
The meter has a temperature coefficient of approximately 100 cycles per degree Fahrenheit over the range of -20 degrees at 2000 kilocycles. Ordinarily this need not require any correction, as normal room temperature will not vary that much, except over long periods of time.

Variations in supply voltage from 112 to 45 volts will cause a frequency change in the 1750-kilocycle band of only 50 cycles, and coupling almost anything to the coupling post of the meter (or even grounding it) will cause a frequency change of not over 10 cycles.

Changing tubes of the same type will cause a maximum frequency change of not over 1 kilocycle at 2000-kilocycles—sufficient to warrant recalibration of the meter. For obvious reasons variations in frequency due to vibration or shock, aging, etc., need not be considered when the calibration of the meter may be checked so readily.

Band-Spread Condenser.

The stability of any oscillator is improved if a comparatively large shunt tuning capacitance is employed, since a large capacitance across the



L1.—63 turns No. 30 Double Silk-covered Wire, 1¼ in. diameter former (1700-2000 k.c.).
C1.—G.R. 756A or remodelled B.C. Condenser.
C2.—.002 mfds.
C3.—.0001 mfds.
C4.—.01 mfds.
C5.—.002 mfds.
C6.—.00002 mfds.
C7.—.002 mfds.
C8.—.01 mfds.
R1.—1 megohm.
R2.—20,000 ohms.
R3.—20,000 ohms.
R4.—50,000 ohms.
R5.—4000 ohms.
R6.—50,000 ohms.
Note.—The values of resistors are fairly critical.

tuned circuit will effectively "swamp out" variations in tube and stray capacitances. In addition, if part of this shunt capacitance is in the form of a fixed condenser, the tuning of the circuit may be spread so that a given frequency range will occupy more divisions of the tuning dial. If the "fixed" capacitance is in the form of a semi-adjustable condenser the spread may be adjusted more readily. In the Colpitts circuit a double-section condenser is required in order that the mid-point of the condenser may be grounded. The capacitance range should be such that the 1700 to 2000 kilocycle band would cover approximately 270 divisions of a 300 division 180 deg. dial.

Alternatively a coil condenser combination could be designed to have a fundamental oscillatory circuit of, say, 3500-4000 k.c., thus giving a greater dial spread at the higher harmonic frequencies.

Tube and Supply Voltages.

The meter uses the type UY224 or UY224-A tube, 2.5 volt A.C. heater supply, and 90 volt "B" battery.

Since the voltage divider is connected across the "B" battery at all times the negative "B" circuit should be opened when finished.

Construction.

The meter is mounted on a ¼-inch aluminium panel to ensure mechanical rigidity, and is enclosed in a shielded cabinet to eliminate hand capacity effects.

Calibration.

Each time before the meter is used either for calibration or measurement, the heater of the tube should be turned on and allowed to operate for at least 15 minutes to warm the tube.

The meter is calibrated by tuning the standard frequency signal to zero beat with an oscillating receiver and then adjusting the frequency meter until a zero beat is secured between the meter and the receiver. Since all of the harmonics of a fundamental frequency will fall at the same point on the tuning dial, one curve drawn for either the fundamental or any of its harmonics will serve as the calibration curve for all ranges of the meter. As many points as possible should be secured, so that the curve will be accurate.

A more precise method of calibrating is to use the frequency meter as a separate heterodyne. the receiver in a non-oscillating but highly regenerative state being adjusted to detect the beat between the standard fre-

quency signal and the frequency meter.

The procedure is as follows:—

(1) With receiver oscillating, pick up standard signal.
(2) Adjust frequency meter until it beats with receiver.
(3) Adjust receiver regeneration control until detector goes out of oscillation.
(4) Carefully retune the receiver and frequency meter slightly until beat between the frequency meter and standard signal is heard in the receiver.
(5) Adjust frequency meter (detector NOT oscillating) until zero beat between frequency meter and standard signal is obtained.
(6) Record frequency of standard signal and setting of frequency meter as one point of calibration.

This method eliminates any error due to the drift in frequency of the short wave receiver, since the receiver is not oscillating. It also reduces the amount of static, power-line noise and other interference which may be present.

Checking the Calibration.

While the meter should hold its calibration over long periods of time it is a simple matter to check one or two points from the standard signal transmissions to be certain that the frequency of the meter has not shifted. It is suggested that the meter be checked at least once a week. If the frequency settings at one or two points coincide with a previous calibration no further checking is required for at least a week. If the meter is out of calibration to any considerable degree it should be either corrected or entirely recalibrated. A quick method of doing this is to place a crystal of known frequency on the grid coil. On turning the dial resonance through, the spot obtained by listening to the click should always be in the same position on the dial.

Use of the Meter.

For measuring the frequency of received signals the frequency meter is adjusted until it is in zero-beat with the receiver, and the frequency is read from the calibration curve. Ordinarily the use of common "B" batteries for a receiver and the frequency meter will provide sufficient coupling. If a very high frequency is being measured it may be necessary to provide additional coupling by running a wire from the meter coupling post near the antenna lead-in, or near to the grid circuit of the radio-frequency amplifier or detector tube.

To measure the frequency of a transmitter the receiver is tuned to zero beat with the transmitter, or any of its harmonics, and then the frequency meter adjusted until it is in zero beat with the receiver; or a headset may be inserted in the meter and the beat between the meter and the transmitter adjusted to zero.

To use the meter as a monitor a headset may be plugged into the meter and the beat between the meter and the transmitter observed, or a wire may be run from the coupling post on the meter to the input of the audio amplifier of the short-wave receiver, and the beat between the meter and the transmitter will be heard in the headset of the receiver. This method is to be preferred, as it obviates the necessity of transferring the headset from the receiver to the monitor, and gives a louder signal, which may be required at high transmitter frequencies.

"ELIMINATION OF B.C.L. TROUBLE."

By VK2EG.

We have all at some time suffered from B.C.L. complaints of interference either from clicks or overtone production. A particular case where I was affected was due to induction and proximity to my own antenna, and a multitude of overtones appeared in the B.C.L. superhet, as well as a pronounced click every time the key was pressed, and the volume of the set was affected considerably also when I came on the air.

The trouble was easily cured by placing an R.F. choke in the B.C.L. set lead-in. The choke must be so constructed that it peaks below the B.C.L. band, otherwise the strength of the signals will be affected. In my case I used 100 turns on a ½ in. former with 36 gauge wire, and the trouble was eliminated, with no sign of overtone reproduction. I think that in many cases of interference where the B.C.L. is close shock is the cause, and not excessive sparking at the key contacts—that is, provided the usual key and mains filters are installed, and someone else may have had the same trouble.

Station VK3LN

S.W. Xmitter.

Crystal controlled on 7021 and 7260 Kc. 247 CO, 247 Doubler, 246 buffer, and 2 Tco 4/10's in P.P. P.A. Keying is in the grid of 246, and is ABSOLUTELY clickless. Every ham who has tried the method has had the same successful result.

The xmitter is completely remotely controlled from either the fireside or the bedside. An automatic CQ caller sends either CQ or CQ DX, and is always used when calling.

Receiver.

AC 235 Det and AC/Pen AMP.

Aerials.

3 x ½ wave forty mtr. Zepps are in use, and a plug system is used for quick changing. They run N.E. S.W., S.E. N.W., and vertical, and are supported by 35, 60 and 90 ft. sticks. The vertical is variable in height from 66 to 125 feet by the use of 20 feet of 1 in. x 1 in. Oregon and 20 feet of ¼ in. copper rod, projecting above the flat top aerial. This is an excellent stunt for the chap with 40 or 50 ft. sticks who wants to try a vertical on forty. Anti-capacity switches throw in either 33, 48 or 66 ft. feeders to any ant.

Broadcast Xmitter.

This is entirely separate from sw xmitter, and is not shown in photo. It consists of 247 CO, 246 Buffer, and Tco 4/10 Heising modulated by a B406, 227, 227, 246, and two 250's in parallel. Resistance coupling is used throughout the speech amps. Two gramophones and a Reiss mike complete the outfit. Power input is 10 watts.

Power Packs.

Five packs are used, all being full wave, and delivering 200, 350, 375, 400 and 500 volts respectively.

HARMONICS.

Message from Wilmer Allison, W5VV, via VK3NY: "Say hello to the gang I met when in Australia; they certainly are a fine bunch of chaps." W5VV is also a very fine chap, and anyone working him can be sure of a good qso.

We hear of the country ham whose shack is situated at the foot of a hill, and who experiences a bad screening effect. Not to be outdone, he erected his antenna on top of the hill, and uses the telephone line as a transmission line. What happens if you want to use the phone, o m?

VK3 SECTION NOTES

Key Section

(Conducted by J. H. Winton, VK3XR.)

New Year Resolutions! What a glorious opportunity to show what the amateur spirit can do. Let us resolve to help the BCL's by avoiding any practice which will interfere with their enjoyment, and by co-operation with them. Their good will means a lot for the well-being of amateurs. Let us help the other fellow as far as it is in our power to do so. Let us all resolve to put the Wireless Institute in a better position than it is now by doing our bit to enrol more members. And, lastly, let us grit our teeth and say to ourselves, "The Fisk Trophy is OURS!"

We have already made a good beginning. The points gained by respective States in the first relay contest (results published this issue) testify to the team spirit existent in Victoria, and, while we were not fortunate enough to be able to congratulate one of the VK3 gang on winning the individual section, our aggregate put us first. "Amateur Radio," while not wishing to be egotistical, lays claim to some of VK3's success by virtue of the information, etc., given on this page in the October issue.

Next contest, we feel sure, will show just what the gang can do when they get going. Best of luck, fellows! And congratulations on the fine effort.

The December meeting justified the hard work spent in arranging subjects for group experiments, and several groups were quickly formed. Outstanding amongst these were the five-metre enthusiasts, who quickly got down to business under the guiding hand of 3KN, and forthwith arranged some interesting experiments.

It appears that 3RS had been experimenting in conjunction with 3AW with the idea of broadcasting a running description of yacht races from a 5 metre rig erected on board one of the yachts. The gear was already built and tests were to be run, so, no doubt, the 5 metre group has done some good work already, as the broadcast was quite successful. (QSA5, R8, T9, from yacht two miles off-shore.)

3BQ, our "old man" of radio, gave a very interesting talk on his early experiences, and a short history of the development of radio communication in Australia. Starting from 1919, when the wartime prohibition on amateur transmitting licences was still in force, he outlined the early types of receivers. When licences were eventually granted, they permitted a kilowatt input to spark transmitters. Shortly afterwards valves were procurable, but had to be imported, so that the ham who burnt his bottle out had six months in which to rebuild his rig before the next shipment arrived. Additional difficulties were provided by irregularity of construction and absence of any operating data on tubes. He then went on to describe the first two-way tests with the United States, using receivers with up to five tuned RF stages, each independently tuned, and transmitters with up to six valves in parallel, and badly overloaded. During the first test in 1923 some 30 American stations were heard, but none were contacted. However, very soon after that amateur circles were stirred by the news that two-way communication had been effected, and contacts followed in more or less quick succession.

When he had finished, Max was bombarded with questions on gear and general conditions, showing plainly that the gang had appreciated his talk.

No doubt, many of you have been expecting to hear 3WI on the air. Unfortunately, thereby hangs a tale which hurts me to unfold. A few of the gang gathered together one Saturday afternoon, and made all the necessary arrangements. All went well until the power was turned on, when we were amazed to see two perfectly good milliampere meters vanish suddenly behind much smoke. The cause was traced to a defective F443 in the P.A., and the effect was pretty, but disastrous. It has now been decided to substitute a pair of 46's in push pull for this tube, and we hope to have the rig on the air on 80 mx early this month. The schedule of operations will be published in next month's notes.

We hear that 3CL, who has been off the air for the last twelve months qrl with study, has finished his exams, so that he will be free to disturb the

ether again. Welcome back, old man. During the holidays 3KN held a house party with the idea of getting his 60-footer up. 3BQ and 3WG lent him a hand, and eventually they managed to get it in position. When not working on his 5 metre rig he has been trying out tri-tet oscillator, and reports excellent results. 3FJ has been experimenting on aerials, and has found that he can get dx results which are nearly as good as those obtained from his half-wave Zepp on an aerial between 16 and 17 feet long.

During conversation recently a discussion arose on the short versus long CQ. Claiming that the short CQ failed to raise a reply, and that the most effective way to qso was by calling a long CQ, the proponents of the question found themselves in the midst of a heated argument. Personally, we have our own ideas on this matter, but would suggest that you fellows give us your opinions on this and other subjects. Your views may interest others, and by chewing the rag on such contentious subjects we can always better our procedure. Let us have your ideas, fellows, and we will publish them in this column.

If you have any suggestions as to how this column should be run, please let us know. It is for your use, and we want you to make it fulfil its purpose. By the way, read our Editor's Page this month. The key section can help most of all in the matter contained therein.

VK3 Phone Notes

Since the above section meeting for December came in the holidays, it was left out, and our next meeting will take place on the last Tuesday in January. Consequently we have not the usual meeting "doings" to report, but nevertheless the Phone Gang is far from inactive.

Firstly, phone stations are notified that until further notice the advertising of "Amateur Radio" as obtainable at McGill's must be discontinued.

There is another matter which we would like to remind some members about, and that is their unfinancial position.

Our president, Mr. G. F. Thompson, is very busy collecting data as to the best time for our Phone Section Competition to be held, from the point of view of reception conditions in New Zealand. As mentioned in last month's notes, it is proposed to bring in New Zealand dx-ers on quite a large scale for the judging in this competition—mainly, of course, to give us information on the "getting out" abilities of the competitors. Since nearly all the reports one sees from N.Z. have some remark or other with regard to local noises, above which only the stronger stations seem to arrive, it is obvious that the dx-ers could hardly be called upon to supply any data on quality.

As a result of Mr. Thompson's communications with the presidents of the clubs over in N.Z., we find that they are taking up the suggestion most enthusiastically, and will show fine co-operation.

As mentioned at our last meeting, the actual time of the competition is yet unknown, but there is no time like the present, and competitors cannot be too early in sending in their applications. These stations should communicate with me at any time, and for the present simply state their intention to compete. Further particulars, such as power to be used, etc., will be called for when required.

Of course, everyone knows that the W.I.A. A.O.P.C. class is now well under way, and our chairman, Mr. R. M. Dalton, 3UI, together with Mr. M. Howden, 3BQ, reports great enthusiasm among the students, to say nothing of the will and enthusiasm of the two aforementioned gentlemen.

To go back to an earlier remark, with regard to advertising by phone stations, we all knew that it was quite in order to advise listeners of various matters concerning the Institute, one of which could most certainly be "Amateur Radio," but when it comes to the point of mentioning where the magazine may be obtained we overstep the regulations mark. A further point which we must bring up is the advertising of lectures. This must not be done. If one station, in communication with another, wishes to "talk" at length on the complete construction operation and testing of some particular theory or piece of apparatus, O.K.; but a station is overstepping the mark if it announces that a certain person will lecture on the same subject for the same length of time and in precisely the same manner.

I think all active hams know by

now, and the rest soon will know, that 3CY is temporarily off the air. Mr. Arthur Burman, the owner and operator (not forgetting Mr. Gerald Clauscen, chief offsider) has carried on test transmissions from this station for some considerable time now, and with marked regularity upon which we must congratulate them—Arthur, the engineer, and Gerald, the announcer.

We were all very sorry to hear a few weeks back over the air that Arthur's health had reached a stage where he would have to give up his work and ham operations for about six months and go away for a complete change. Well, now that he has got away and is having the well-earned rest and looking after himself, we know he is getting better once more, and before very long we will not be at all surprised to hear him back on the air again "full of beans," as it were.

I think Gerald would like it mentioned that, as a result of these arrangements, he is now "out of a job." Is there any GOOD phone station in need of an excellent announcer? I can personally recommend one who will give his superb services for, I understand, the simple consideration of being let loose before the microphone.

I have learned from a very reliable source that the now world-famous 3TH has gone to Lakes Entrance to spend his well-earned (?) holiday. I am sure the phone gang will agree with me when I extend my sympathies to the fish (jelly and otherwise) at that resort.

To become serious once more, the N.Z. DX Radio Association president has gone to considerable trouble in communicating with us at length, and states that they will do all in their power to restrain the dx-er who sends bogus reports. If all such doubtful reports are brought along to the meetings by the members, same can be dealt with officially and, through the medium of the president of the N.Z.D.X.R.A., run to earth.

In closing, I would like to remind the phone gang that the next meeting will be held on the last Tuesday in January, namely. January 30.

We trust you have spent an enjoyable Christmas and New Year.

73's.

IVOR MORGAN, VK3DH.

NEWS FROM FEDERAL HEADQUARTERS

By G. B. Ragless, Fed. P.O.

High Power Permits.

Mention was made regarding the above in the last issue of "Amateur Radio," since which a letter has been received from Mr. J. Malone, Chief Inspector of Wireless. The department considers that the previous statement is apt to be misunderstood, and wishes to make it clear that the extension of power is only for Morse stations, and not for the use of phone transmissions.

Tenth Annual Convention.

The Federal Executive has decided that the Convention's first session will be held on the evening of January 26, and continue until all business is completed, ending on January 29. The Queensland Division has appointed Mr. L. A. Deane, VK5LD, its proxy, and other Divisions are asked to make preparations at once. An agenda prepared by this State is in the hands of all executives. and all States are requested to make additions.

In regard to the matter of Federal Headquarters for 1934, the South Australian Division has recommended that it remain in Adelaide owing to the amount of work under way.

Further particulars regarding the Convention were contained in the last issue.

Federal Finance.

Owing to non-payment of per capita fees by the majority of States the matter of certificates and other important matters have been held in abeyance for the time being. The lack of funds has severely handicapped the work of Federal Headquarters.

Fisk Trophy Results.

Well, here we are with all the news regarding the five-point relay contest, the first leg of the Fisk Trophy. The full results, showing how each State and every individual fared, is given, with the following tables:—

State.	Total Scores.	Points for Aggregate.
VK3	3951	5
VK2	3513	4
VK5	3300	3
VK7	2868	2
VK4	2473	1
VK6	2421	0

The Twelve Leading Stations.

Station.	Points.
VK7CH	1383½
VK6SA	1378½
VK5JA	1169
VK4RV	1154
VK7RC	1046½
VK2OZ	940
VK3HQ	885½
VK3RJ	873½
VK5MU	798
VK3ZC	719
VK4AW	674
VK2OF	620

Sub-Totals.

Victoria—3951.

3HQ	885½	3BQ	49½
3RJ	873½	3DT	44½
3ZC	719½	3OW	42½
3JE	365½	3GR	40
3XK	322½	3ET	30
3KO	91½	3HL	30
3GQ	78	3ML	30
3HK	66½	3NK	30
3FX	53	3NZ	30
3PS	53	3SK	13
3HG	50	3CX	3
3KL	50		

New South Wales—3513.

2OZ	940	2XV	48
2OF	620	2DZ	46
2DR	582	2DQ	36
2BP	226	2UP	31
2YL	214	2MY	30
2PE	134	2OM	30
2OU	122	2RY	30
2WO	112	2CK	29
2EL	107	2HX	28
2KJ	56	2RK	16
2IZ	54	2YI	12

South Australia—3300.

5JA	1169	5LD	249
5MU	798	5PK	127
5ML	504	5RH	27
5WP	400	5RT	26

Tasmania—2868.

7CH	1383½	7JB	265
7RC	1046½	7CD	173

Queensland—2473.

4RV	1154	4LG	43
4AW	674	4MR	40½
4JU	273½	4GG	13
4UU	109	4EW	12
4TY	62	4EL	305*
4AB	47	4DR	256*
4GK	45		

*Scores are shown, but not counted in State total. (See text.)

Western Australia—2421.

6SA	1378½	6MN	165
6FO	580	6PK	30
6RL	267½		

It will be seen that Victoria will hold the trophy for the first six months, while VK7CH just beats VK6SA for the highest individual score. The performance of VK6SA is easily the most outstanding when it is considered how far away VK6 is from the centre of activity, and shows what can be done against geographical and other handicaps.

The condition of some of the logs was very bad, and made checking exceedingly hard, but even these stations deserve credit for sending them in. As usual, a number of stations took part, but did not forward any report. Surely if it is worth taking part at all every station should send in a record of the work. It was surprising the number of stations that both underestimated and overestimated their scores, the extra half-point for a fifth State message upsetting some calculations.

We wish specially to commend the following stations for the neatness of their reports, which made the work of checking easy:—VK2OZ, VK2DR, VK2OU, VK3RJ, VK3KO, VK4RV, VK6SA, VK7CH. It is with regret that we have to mention that the reports of VK4EL and VK4DR were received after the closing date, so could not be counted in the Queensland State total. The scores are listed so that the operators will receive credit for their work, but had these reports been received earlier the Queensland score would have exceeded Tasmania's.

Several stations hinted at unfair methods and "unsporting" tactics being adopted, but no definite charges were made. It would seem that in a contest where the welfare of the State team is the chief consideration very few unsportsmanlike methods could be used. Taken all-in-all the contest seems to have been a great success and greatly enjoyed by all the competing stations. The Federal Executive wish to thank all entrants for their interest, and anticipate making the next leg of the competition even more interesting.

The next contest will probably be held about May, 1935, and Headquarters would be pleased to receive any ideas for same.

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

ZONE 1.

Well, gang, it's such a long time since I have written notes that I don't know how to start, especially so soon after the Five-Pointer. I am still hot and bothered (hi). I had some of the rottenest luck during the contest. Went out for a spin in the car, got about 50 miles out, when "phut" went the crown wheel and pinion. That lost me four days of the contest, so gave it up.

Personally, I think 7RC will have the highest score, with either 2BP or 2OZ running a close second to bring home the bacon to VK2.

Well, the conditions on all bands up to date have been good to bad (hi). 40 is the most widely used band still. Plenty of qrn on 80 metres, so have not been up there at all, while the dx is starting to trickle through on 20 metres. Don't mention 10 mx or 5 mx, please.

Here are some of the boys heard on 40 mx:—VK's 3JE, 5MK, 4RV, 4TY, 4GK, 3HQ, 4EL, 7RC, 3ZC, 7DR, 5JA, 4AW, 7CH, 4UU, 3DT, 5RH, 5MU, 3WG, 3XK, 2XQ, 2HF, 4MR, 2AW, 2PC, and a host of others too numerous to mention. Dx worked on 40 metres:—W6GTD, UP1FF, PK3BM, OM1TB (qso'd him three times now, and asked for a card each time, but still waiting, hi), VE5G1, W1EWF, AC8RL, W6EXQ, W6EAK, W8CBF, W6T1, K6BLA, W6CXW, W6CUZ, W5PX. Heard EAR302, EAR229, G5BU, G5DS (called, but nd), KA1WE, J5CC, JK1HG. That's all!

Reg, of 4RV, complains about only getting in three nights on the test. Reg is now second op at the talkies over there. Best luck, om. 2AW is thinking about taking a xmitter back with him when he goes in about ten days' time. He is still using TNT with 7 watts to 245. 3DT's xtal is playing up. Say, OC, those cuss words would upset anything. (Hi, hi.) 3NG wasn't in the test because he couldn't get on regularly. Hard luck, OB. OM1TB is using two 852's in pp with 2000 volts at 200 mills. Oh, boy, for an 852! Was qso UHE; he had an R7 RAC signal. This boy (?) is at the Naval Depot. 2XQ is really John, of 2BE. Congrats, John, OC, on getting your own call. Still complaining about dx being scarce? 2HF is using a modulated sig. His rig is 47 CO, 47 FD, a 50 watter in final with 90 watts input. No wonder the valve companies do a roaring trade!

Haven't any dope from the Broken Hill gang this month, but heard Dud, of 2DQ, qso-ing with 4RV the other morning, so he must still be wriggling the toes. Guess we'll be able to deliver the goods next issue.

Dx heard on 20 mx isn't much (?), as I didn't stop down there long. However, I did hear OH, G, W, EAR, FM, and K. Notice old 2HL has shifted his qra. Say, Bill, are you going to become one of those, too?

JIM (2PE), A.R.A. Zone Officer.

ZONE 2.

Temporarily the boys in Zone 2 are on the quiet side, VK2XQ and 2EG being the most consistent; they're always on (hi).

14 mc has been the order of the day for us. 2XQ contacts G regularly between 1200 and 1400 GCT, and Europeans come through fairly regularly. 2EG qso VQ4CRH, OK2OP, PK4AZ, PK4BO, HC2JM, G6HP and J5C1, and clicked his WAC after two months on the air. Fb, sez I. 2XQ worked ON, PA, OK, OH, G, HAF, PK, and landed a VS6 on 7 mc. Fb, John, OT.

Heard a few locals down 14 mc, all States taking advantage. VK3's seem to have trouble in clicking the dx. So do ZL's, but the other States land it O.K. Guess you boys will have to look to your receivers (hi). Conditions are very uncertain there, though, and dx comes and vamooses at a minute's notice.

Heard 2WU cqdx on 20. Lew has been after Africa for four years. Heard ZS5X call cqdx just as you signed, OM. Too bad, OT. VK5MU has a sked with ZS5X and SU1EC.

14 mc:—W sigs come through QSA5 at 10-12 p.m. S.M.T.; all districts been heard here, but none worked. W6AMG say they don't hear any VK's there yet. 2HC worked YI and tried his fone. Ray is on now and then QYL (hi). 3.5 mc is NG, and 7mc provides only fair dx, as conditions vary.

VK2 is coming in unusually strong at night, 2BK, 2JU, 2NR, 2NS, 2ZH always R max (guess you overload the 245 2BK, OM), 2LJ, 2XP, 2FY, 4EL are a good lunch hour quartette.

The VK4's are very consistent; 4RM, 4EW, 4NS, 4RV, 4JU, and 4US heard often. VK2KR has been qrl away from home, and won't be about much till Xmas. 2KN qrl study in VIS. 2LM reports active. 2HV trying to get his xtal going; makes sked with me often, but ND as yet. How come, OM? 2JF heard on again for the first time for years; pde T.P.T.G., nice signal, and has a sec op. The Newcastle gang have been romping in of late; usually skip here. 2EG has had some fine qso's with 2OF, 2WU and YL. 2YO and 2KZ, the Kurri boys; 2ZW and 2NL often heard QSA5. Worked W3BBB the other night. He says he's using a couple of 852's in push pull with 1000 watts. Oh, boy! Oh, boy! (Hi.) The rock-crusher dx has markedly disappeared, though old KA1HR seems to have lost his T9 sig. Old-timer 3ES heard here lately, working A.C., also 3HL, 3JY, 3ML, 3ZC. Say, John, how is the xtal rig? 6FO worked on 20 metres; Jim, of 6SA, 6FL and 6GF all heard on 7000 k.c. Jim put over a mean sig all right in the tests, also a mean total. 7RC is the most consistent Tassie. 7CH now and then is heard, while 7CW and 7JB have also been noted. The Byrd Expedition to the Antarctic is on 36 mx, and listens for hams on 7 mc. The call is KTJY. ZL4FT landed him. 2EG will be changing his qra after Xmas to parts where a good dentist is needed and qrm isn't.

Guess the tube is hot now, so will say 73.

IVAN (2EG), A.R.A. Zone Officer.

ZONE 3.

During November conditions have been punk on all bands on account of QRN. 20 metres conditions were FB for local QSO, with some of the VK2 and VK4 phone stations coming in at R, Max.

VK2YK leaves for Newcastle, where he will spend his Xmas holidays, on the 15th December. Roy reports that he has a weekly Sked with YH1RV, and he has discovered that YH1RV was an old friend that Roy has not seen for over twelve years, when they both received their tickets together. YH1RV is on a copra plantation in the New Hebrides. VK2ZM is now on 40 and 80, putting out good phone with his M.O.P.A. Jim will be putting up two 60 feet sticks for his Zepp as a Xmas present. VK3YN also on 40 mx and 80 mx, using phone with an R.A.C. carrier. VK2GM again on the air on 80 mx heard testing with loop mod., working 2ZM and 2YN. 2GK will be changing his QRA to Lismore very soon. VK2OU reports conditions NG on 20 mx, although G's have been answering his CQ's. Sid can't hear them. (Hi.) Sid wants a 1500 volt trani and not a 1.5 volt, as mentioned in last month's notes. VK2XO is now visiting the North Coast gang while on holidays. 2XO wants week-end skeds for 19 mx. VK2GH is now on 40 mx, chasing the DX with a R.A.C. QRO rig.

Crieff (VK2XO), A.R.A. Zone Officer.

ZONE 4.

'Twas with very mixed feelings that we learnt the other day of the news from Singleton. Alex Mather (VK2JZ) hath taken unto himself a wife, espoused QRM, or gone and got married, according to the way we look at it. We had all heard so many rumours in the past of a similar nature that when we were confronted with the actual fact we were inclined to place the blame on Dame Rumour once again. However, the Ham world will join with me in wishing our old friend all the best. Ham radio loses one of its most enthusiastic supporters, or perhaps maybe the loss will only be temporary.

The Newcastle Radio Club has taken on a new lease of life. During the last month it has passed through the "valley of the shadow;" but has come out a more vigorous body than before. Under the new regime general meetings are held only once per month and club nights every Tuesday. The committee have arranged a series of entertainments covering a period of some weeks, which should prove a very excellent inducement to those lagging members in the past to patronise their club.

The gang have been very active of late. 2OF has been working Yanks, KA, K6, VP, J and others in fine style on his new rig, a cc job from his new QRA at 56 Broadmeadow rd., Broadmeadow. 2MT is using M.O.P.A., and has a new stick up to 40 ft. 2CS occasionally pounds the brass for dx and works Yanks at any time he wants to. 2KB experiences much

power QRM, and is contemplating a single signal super. 2FN is still under the RI's ban; but occasionally takes his portable 56 mc rig out. 2ZW works new countries in Europe on 20 mx.

2OC in Wyong is preparing for big things on 20 mx, and is rebuilding. 2CK pedals a bicycle to obtain power for his rig, which is cc, but not in the ordinary way. He is very good at pedalling and pounding at the same time.
—Stan Grimmett (2ZW), A.R.A. Zone Officer.

ZONE 6.

Conditions on 80 mx for the past month have been terrible, QRN for the most part holding sway, yet there are a few of the chaps still trying to hold the fort. Among them are 2HU, 2WH, 2WA, 2BP and 2SL, and, of course, 2QA; but for the most part the battle has been unequal, QRN and QSB being long victors.

On 40 mx conditions are a little better, but QRN still makes its presence felt, due, no doubt, to the unsettled weather conditions which prevail over the Commonwealth. The DX which the other VK2's are working cannot be heard at all in this centre, while the VK2 sigs come in here right till midnight. Under more normal conditions these sigs fade out about sundown. The most consistent stations seem to be 2XQ and 2EG, with their 50 cycle I.C.W. Both these stations use cc, but the filter seems to be missing from the final stage. They live within half a mile of each other, and seem to find the DX O.K. at Quirindi.

On the week ends one hears some FB fone, both local and Interstate. The quality of most Ham fone has improved greatly during the last year or so, it being very rare to hear a frequency modulated self-excited outfit. The two fone stations that come in here best on the 40 mx band are 2NS and 2HC. Conditions on 20 mx seem fair. One hears DX from 10 p.m. onwards, also an occasional Yank fone station, about 2.30 p.m. QRN is practically absent from this band. The writer received a surprise while listening on this band one night at about 8 p.m., the beginning of December. All the VK2 stations were coming through FB, and the following were logged in about ten minutes: —VK's, 2NZ and 2HW R9 on fone and FB, and the following on cw:— 2XU about RMax, it being impossible to heterodyne his sigs. I understand he is using 150 watts in a T.P.T.G. rig. 2JG had an FB T9 R9 rig. 2PS and 5XK, R5, and all the following at R4, 2OF, 2XQ, 4RV, 3MR, ZL1CA, PK1CX and SU1EC. All sigs were logged at the one period and all QSA5. These conditions only lasted for about 30 minutes, then faded out. I don't know if this is usual; but is the only time it has been noticed here. A watch has also been kept on 10 metres, but so far no sigs have been heard. Now for the usual grouch. This month it is directed against the chaps who "just couldn't say good-bye." There are some who will persist in sending an unnecessary amount of "73, cul, cheerio, and 73's, cusm, good-bye, well, cheerio, a merry Xmas, 73 cheerio," and then some. It might be all right if you are saying good-night to the Y.L.; but on the air it causes a lot of useless QRM. Nothing is more annoying than to be QRM by a station who takes five minutes to sign off. Surely it is sufficient to just send a sig 73 or GB, then QRT, and thus give everyone a fair chance.
—GB, Jack (VK2QA).

ZONE 8.

After a little recuperation at the seaside returned, only to find QRN worse than previously; therefore, very little activity. After a good many years Albury has brought forward another Ham to the ranks in H. Dixon. He was successful at a recent A.O.P.C. exam., and is now waiting for his call sign. VK2DN now back on the air with 3-stage xtal set on 3602k.c., with doubler to 7204k.c. Reports QRN fierce on both bands and Interstate sigs very weak. He has under construction an electron coupled Trig. Meter. Jack says the 224A makes an FB doubler or buffer with 300 v on plate, giving ample excitation for a 210, but good grid chokes are necessary. VK2VF, are those exams. over yet, Reg? Let's know what is doing. VK2SG, accompanied by myself, visited Wyong and had a very pleasant day, spent at the shacks of 2TX, 2OC and 2CK. Possibly we will hear 2SG on CC shortly; what do you think, OM? Owen hopes so (Hi).

—Noel (2OJ), A.R.A. Zone Officer.

NORTH SHORE ZONE.

Conditions on 40 have been pretty punk lately. Qrn has opened fire, and evening dx contacts are becoming very difficult. W6FKC (well-known East Coast ham) says that VK's and ZL's have been hard to qso during the last month (time of writing, 7/12/33). Let's hope that things improve before long. 2AH is still getting out f b on 20 mx. He seems to pull dx out of nothing. He has WBE, and has had WAC three times during the last month or so, and would have WAC in three hours if the 6th continent (which he heard) had answered his call!! Alan has put up a new stick, about 50 ft. XUI, YI, OK, VS3, RA4, ZT and OA have been worked on 20 and 40 metres. Bruce, of 2BA, has found out that superhets work better with a little more voltage on the plate (Hi). His super is working fb now, as he has increased the plate voltage from 90 to 200. 2BA is still working dx on 20 mx, but finds it hard to get new countries. Pity we can't make up some more, as Bruce has worked most of the present ones. 2DA has been working his share of dx. Keep it up, Harry. Dud, of 2DU, surprised the local lads by working HC8 and ZS8 at midday on 20 mx. Fb om. Dud is famous for his good qual 40 fone. 2DY doesn't seem to be active lately. Nothing from Bill, of 2GU, this time. The penalty of living near the water as the hot weather approaches. 2HF is a wireless patrol man. He has left 6 ft. long ago, and makes me look like a pippin. (You're telling me.—B.P. Sec.) He will be qrt for abt a month, as he is working on his hefty station. Plenty of 50 watters lying about. (Hi.) 2HL had a visit from 2HZ and 2AH. He has long 5 mx qso's, but finds it difficult to contact on 5 mx across the Harbour. Roy, of 2HO, is preparing for 5 mx and other bands, and has 2nd op learning the code. Let's hear more of you, Roy. Bill, of 2HZ, was up from Wollongong one week-end, and with 2AH visited 2HL and 2BA. Roy, of 2HY. finds 20 mx a bit dead this month. However, he's worked a couple of SU's half-a-dozen OK's on 20 mx, and V8AB at about 12.30 a.m. on 40. 2HG has been silent for six months, but expected to get gg again about Xmas time. 2JV gets in my path occasionally when he meanders around Sydney, and we chew the rag. Haven't heard him on the air for some time. Too much chess, I suppose (hi). He has an AC2 rx in his shack. The lull before the storm at 2JY. Something doing there, but so far no sigs emitted. 2KA has some very good Telefunken fone on 40 mx, using 4 stage xtal with 210 in pp in the pa. Paul has put some good fone over to W. He is thinking of building lazyman 2DR's cq machine (hi). 2KM reported by radio on Sunday afternoon, 3rd Dec., when 40 mx went berserk and locals normally in skp were all R max. Tom has just finished building a new mopa with 45 and 210. He uses Heising mod with 250, and a Reiss mike. His qra is not too good, and he is troubled with plenty of man-made qrn. Too bad. Len, of 2LD, is still busy playing boats in the Navy. 2LZ has finished his rebuilding, and has got his linear amps perking o.k. at last. Everything is shielded now, except the p.a. Con has been active on 250 mx lately, but has found time for a little dx. He showed 2FQ, 2FZ, 2AH and their 2nd ops how to blow meters up when his 20 mx rig developed a short ckt. Norm, of 2NB, has staged a comeback after about two years, with qro using 4 stage xtal. Opening entries in his log include F8 and W on 40 mx. 2ND is down on 40 mx again, after a successful season on 80. Norm has also taken out the call VK4ND, as he intends visiting there shortly. The whole amateur fraternity are anxiously awaiting arrival of 2ND's new Comet Pro, coming direct from U.S.A. 2NG Neil has a Heising modulated mopa on 40 mx, and has got out to ZL at R7 with his fone, using a Reiss mike. W and K6 are cold meat for him on 40. Why, oh, why, should Neil have been allotted the task of debating against 40 mx fone at the last A.R.A. meeting. It was a crying shame (hi). 2OT is due back this month from his last cruise in the Navy. 2UG has given radio the bird in favour of his aviary. The Doc has a splendid collection of birds. 2UP (the "no meters" expert) is using 3 stage xtal; but, say, Jim, om, whyfore the AC note emitted therefrom? Jim also uses a matched impedance skywire. Ron, of 2VG, has worked plenty of G's in the late afternoons on 40 mx, but he missed the bus when PA and YI called him. An old ham is making a good comeback down Manly way with a 3 stage xtal.

Haven't heard what call he has landed yet. Andy, of 2VR, is coming on again with 46's in pp in SE rig, and Andy paid full list price for those 46's!!! Hard cheese, om.

Whoopee! Ian, of 2XC, has finished his Uni exams, and is back again in full blast on 40. Now bring out your dx! ! 2NP is a new ham out Gladesville way, and is using 5 watts to a B405. Charlie has been on all bands except 5 mx. He intends gg qro shortly. 2YC is sneaking up a lil stick on top of his flats at McMahon's Point, disguising it as a toothpick so that the manager of the flats won't object! Jim is keen on the new Tritet ckt for his 10 mx rig. 2ZG has been off the air for a bit. What's up, Jim? 2ZZ, out at Asquith, is still very quiet. The rural life must have got him down (hi). AG, BF, DE, DJ, EC, FM, GA, GJ, GO, GW, AI, IJ, JB, JP, KC, KX, LP, LQ, OE, YH all quiet. Come on, chaps, use up your 30 bob. Give me a shout, phone call, letter, telegram, or anything, and let me know what you're doing.

The 1st Div sigs have a new mag called "Vic Eddy," which has the doings of the soldier hams therein. Very good little book. ZL1CD has announced that he will be on 10 mx on fone every Sunday between 10 a.m. and 2 p.m. Sydney time. He will listen for calls on 20, 40 and 80 mx. 2QR has put a 250 in p.a. instead of 210, and another 250 will soon be keeping it company. Bob says that the 250 shuts him off the air when it considers that he's said enough. Sometimes it miscalculates and stops osc too early, leaving Bob high and dry with his AR, K, still in hand. The 250 has improved the rf and the bcl complaints. Bob got R7, T9 from VE2BE. He's keen on getting a couple of 50 watts for his p.a. Had a 3 hour phone qso with Laurie, of 2SL, recently. Laurie is always keen for a good chew. He has very good fone. Bert, of 2ZI, is now at Lane Cove with a mopa. Lapping out of my district, 2FZ, of Temora, is hamfesting in Sydney, and has been visiting some of the local boys. I recently took Alan, of 2AH, on a mobike ride round a few of the shacks near Epping. 2NR had just crawled home from a wet afternoon playing cricket, and was pleased to show us his big perk. Frank, of 2ER, showed us some jolly interesting points about xmitter adjustment, and a snappy 2nd detector idea to wipe out qrn. It looked the very beans on paper. Will try it out some time. 2QR was "at home," too, when we called, and made us very comfortable internally. 2YA was found seated amongst his gear, and debating what sort of rig he would try. Just like that photo on the cover of November QST, only Rex didn't look so technical (hi). 2QR, 2AH, a BCL and self recently paid a visit to VIS station at Pennant Hills, and had a very fb plus time there amongst the rf. 2DR has been plugging along on 40 and 80, cursing the 40 mx qrn, and hoping for better times. 80 mx has been better than 40 mx, as I worked a ZL on fone who was R4 when contact Interstate or overseas was impossible on 40 owing to qrn.

One by one they are departing from the realms of 80. Only a few diehards remain. 2RJ, 2HU, 2SL, 2BP, 2DR and a couple of others make up the entire VK2 rearguard. Too bad!

DON (2DR).

CUMBERLAND DISTRICT.

2BK had his shack invaded by a B.C.L. brother-in-law, who, of course, made a complete mess of the transmitting tuning. He swears he will install barbed wire round the xmitter to ward off the ravages of fiddling relatives. 2BK has done some good dx, although he is quite a new ham. His bag includes KA7, KA9, OM1, AC2, XU, K6, W and VE. F b, Jack, o m. 2PH has had a severe bout of 'flu, and has been feeling vy qrp. We hope he is better by the time this is in print, and is able to sit up and take a little liquid nourishment. 2FY has a portable xmitter which he takes to the bush with him. He uses a Ford coil for power supply. I tried it once and promptly blew the blocking condenser.

73.

REX. (2YA).

HARMONICS.

Received by VK3HK, the QSL of W7CB1 is printed in blue on 3-ply veneer wood, and is thin enough to use a typewriter to fill in the requisite dope. W7CB1 is in the timber business, hence the advert.! Looks as though wallpaper is giving way to the more modern panelling of shacks.—VK3PS.

VK4 (QUEENSLAND DIVISION)

The monthly meeting was held at headquarters, Heindorff House, Queen street, Brisbane, on 1st December, before a good attendance of transmitting and student members.

Jack Files, 4JF, was elected to the council owing to the resignation of 4AH.

A library is to be formed comprising prominent American and Australian monthly journals, with an entrance fee of 2/6 and a charge of 3d. per book per week for city members. Country members will obtain this service free of charge. Mr. Wishart, 4WT, and Mr. Kemp are acting as librarians to check and forward all copies. In addition country members are to be supplied quarterly with a resume of the general activities of this division.

The official station, 4WI, has now ceased operations on 200 MX fone, and is now being altered for 80 MX fone work. A definite schedule will be run on 80 MX telephony on Sunday evenings, commencing early in February, for the promulgation of Div. notes and doings. A miles per watt contest, using portable equipment, is to be run on each last Sunday of January, February and March, between the hours of 1000 es 1600. The last Sunday in January and March will be used for CW, the Sunday in February being reserved for fone. Any band may be used and location must be portable; all logs showing stations worked and total power used (fil. es plate wattage) to be forwarded to the secretary not later than the 9th April. A cup is to be donated to the winner of this contest.

Correspondence for the Institute should be addressed to the secretary, Box 1524V, G.P.O., Brisbane.

Mount Nebo Week-end Camp.

Present.—4TS, 4WT, 4HW, 4RB and six student members.

Conveyance provided by 4TS, 4RB and Sammy Hutchison. 4TS, looking the least reckless of the trio, was chosen by 4WT to be entrusted with the transportation of his august self and his booful three-toob nickel-plated all-wave portable receiver. Narrow mountain roads never do appeal to Bill, but when the summit was reached and the froth blown off a couple his eyes resumed their normal size.

Jolly's Lookout was chosen by the boys as the headquarters base of operations, and the shelter shed was duly taken possession of to be made horribly untidy with a maze of aerial wires, batteries and other sundry junk. The gear included three receivers (which actually worked) and two transmitters. 4RB's mitter was an 80-metre xtal rig, but owing to heavy QRN on that band it could not be used. The 40-metre rig (4AW fabrication) was made to perk, but only after 4RB had exhausted his repertoire of bad language on the dingus. A few contacts were made with local and country lads, but no DX.

Gordon Shearer, 4GA (kid-whacker of the Mt. Nebo State school), paid several calls on the boys during the Saturday and Sunday, and assisted materially—to run the canteen dry!

"Smiler" Lynch (as usual) took first prize in being the most prolific source of "nautical" yarns.

4TS and "Wee Georgie" Allingham ably performed the duties of cookies, and f.b. cookies they were, too—rissoles, bacon and eggs and coffee for brekker—Whoopee!

Several types of commercial auto "B" eliminators were tried out on the transmitters and receivers, and all proved moderately satisfactory.

Conditions on the various bands during the month have not been of the best, although 40 MX still holds first place as far as DX is concerned; 20 MX has been quiet, nothing much being heard here; 80 MX at present is very bad, with QRN so consequently ND.

Congratulations to VK4TS, Ted Shorten, on his new position as secretary of the W.I.A., Qld. Div. Hpe you still find time for a QSO, Ted, OB. 4UK Vic Herschell, of Toowoomba, is now on xtal using 247 CO. 246D is TBO 4/10 PA. Vic is receiving FB reports, es is now looking forward to Qso's with the boys in VIB. 4GU, who recently passed his A.O.P.C., is now on the air with a three-stage xtal outfit using 247, 246 es pair 245's in final. 4RC, often heard with a gud DC note at R7, is using TNT with an input of 25 watts to a 246. Now that he has been relieved of his duties as sec., 4WT Bill Wishart, of Graceville, intends rebuilding his xtal rig. Understand that when completed he will

have one of the finest outfits in Brisbane. 4OB heard recently testing out fone with fairly clear speech, but modulation percentage rather low; believe Otto is using Hartley with 350 volts on a 245 grid mod. 4RJ is at present concentrating on 200 MX fone work, and has been receiving reports from ZL es VK6 of his night transmissions; also received a report from Rockhampton of his daytime transmission. Dell has vy fb equipment, and sets fine example of station layout. 4NG at present on location at Tambourine using the portable gear to great advantage. 4LJ had intentions of an early return to the air, but is at present QRL Main Roads, Townsville. 4MM, having trouble with power supply, has blown tranny, filters es rectifiers. How cum, Matt, ob? 4DR Qrl working on public address amplifiers. 4RM, of Mackay, heard recently working. 4UK, of Toowoomba, is coming in at R6 gud dc. 4JB heard calling the Toowoomba gang on fone the other nite. Ock says condex n s g lately; think you are spending too much time preparing the fishing gear for the Xmas holidays. Sa don't forget the Camp Pie. 4VJ has been trying out 2A7 tubes in a short wave super het., and says they're the berries. 4GS finds it impossible to work on short wave owing to heavy DC motor Qrm; he is now transferring his activities to 200 mx fone work. 4JN, of Mitchelton, still on 200 mx fone, es judging by the reports received by him is getting out fb. 4GK, of Wynnum, heard at R7 in Toowoomba recently on fone using grid modulation, quality es clarity being excellent, also the percentage of modulation being fairly high. "Mac" states that condx on 20 mx at his Qra has been very poor lately, practically no dx being heard or worked for some time. Several of the boys here, including 4AW, 4WT, 4RJ, and 4RY, will be taking their portable gear away with them at Xmas time, and all look forward to some pleasant Qso's.

In conclusion the writer would like to congratulate the Victorian Div. and the Editors of this magazine on their enterprise, and trust that "Amateur Radio" will have 100 per cent. support by all VK hams, and that it will have a long reign of prosperity.

Well, gang, all for now; and may 1934 bring you all happiness es prosperity. Cheerio.—73RY.

VK5 (SOUTH AUST.)

The last general meeting of the W.I.A. (South Australian Division) was held on November 29 at the clubrooms, where a fine lecture was given by Mr. W. Honnor, B.Sc., on "Modern Sets and Their Associated Circuits." The lecture proved very interesting, and was illustrated by circuit diagrams, which made it easy to follow.

A cricket match was arranged for December 17, but unfortunately had to be cancelled. It will probably be held late in January.

The Transmitters' Section held their meeting on December 13. The main item was an auction sale of junk parts. These sales are quite an important feature now, and take place about every three months. Mr. Launse Deane acted as auctioneer, and did a fine job when the interjections by prospective buyers are kept in mind. Hi!

Owing to rotten conditions the activity in VK5 has not been great. Dx seems to have been absent for about three weeks except for occasional Yanks, etc. In view of this I have not much dope on the doings of local hams. 5MD seems to be concentrating on the 200 metre band. His quality on that band is excellent. Glad to know that you are entertaining the bcl's with something besides bumps, Doc. 5GO, George Gurr, of Parafield Aerodrome, puts out a nice sig on 7 mc. Dx includes ZE, W, J, etc. 5RO was a very active bidder at the junk sale. He bought a bank of filter condensers. Sa, o m, you will have to get a rectifier first! Bob has an f b xtal. Three notes. AC at the bottom of the band sometimes, CC on its true wave, and RAC on the top of the band. It is handy in case of qrm on one of them. He can use either of the other two then. Hi! 5LP, of South Payneham, is rebuilding completely. The proposed rig is a four-stage xtal, using an E406 p a. Receiver is to be a five-tube S.S. superhet. 5RT is building a swell looking rig, according to reports. Sa, Bob, how about saving a little room for a condenser for filtering the p a supply? 5LD has a p p rig on 20 metres, and puts out one of the best sigs on that band. 5MK still finds dx, and has no trouble in qso-ing Yanks. This ham uses a 45, which he treats kindly with 650 volts. 5JH does very well on 20,

also works European dx by the bagful. He is using a Hartley with an E408N tube, and puts out two bonza sigs on that band. 5MF is busy building a seven-tube S.S. superhet. This set should be the goods. Al's other activities seem to be sun-bathing and entertaining yl's, to say nothing of "mystery (?) hikes." 5MU is another ham who has caught the rebuilding craze. Malcolm is the proud owner of an 866 rectifier. 5RX reports dx a bit slow lately. He has been qso with a V8, but owing to the B.C.L. qrm has not been on much. 5MY has xtal going again. He is using an xtal oscillator with harmonic output, and reports excellent results. 5YK built a m op a for 20, using a pair of 45 oscillators in pp, exciting a pair of 210's likewise, but owing to a shortage of dx has not had proper chance to try it. 5TX, the qrp king, has a three-stage xtal rig with two watts input to the p a. Anyway, Jim, the sig is about the best T9 note I have heard. 5MB is just about to take the final plunge, hi! Congrats, Merv, o m. Hope all your troubles are little ones! 5LB is using a three-stage xtal rig with a 45 p a. His input is only 15 watts, but he has been working plenty of dx, including W, KA, OM and PK, and has been reported R8 in J. F b, o m. 5JA has not been heard since the contest. Anyway, o m, you did a f b job. Guess the contacts on the bug want cooling. 5JO has been fairly active on 20 lately. He has just built himself a new shack, and has a nice looking rig with a TBO410 in the p a. 5ML has not been on much lately, due to punk conditions. He has been getting plenty of dx cards from Europe lately. 5LG has forsaken the p p t p t g for a MOPA on 40 using a 203 and a TBO410 with 500 volts on the plate. Has been getting T9 reports —sometimes! The old p p rig is to be converted to 20 metres shortly. Understand, Leith, you have a new second op in the place of the yl sec op who used to punch the brass.

Here at 5FM I have been mainly experimenting with various types of antennae. As far as I can say, the single-wire matched impedance feed seems to be the best for all-round use.

The last A.O.P.C. exam seems to have been a great success. No fewer than 12 got through. Congrats, o ms. Hope to hear you all on the job soon.

In conclusion, I would like to add that these notes are the last I shall be writing for some time. 5ML, Geoff Coombe, has undertaken to do the job for the next three months, so, please, you chaps, give him the low down on your outfits and doings. He is not a crystal gazer. Hi!

May the New Year bring you more and more dx.

73's
5FM.

Did any of the gang ever get their boomerangs from XVK8BA? Hi! hi!

VK6 (WEST AUSTRALIA)

President's Message.

With the arrival of 1934, so will our f b Mag bring you the best wishes of the New Year, and also may your next qso be a South American hi! hi!

As in the past years of amateur radio in this State, treat this year again as just a grand hobby packed with experiments, science and patience. Above all, do not forget that important organisation, the Wireless Institute of Australia, towards which every ham in VK6 should do his part to make a home for the inmates of amateur radio.

Wishing you a Bright and Prosperous New Year, I am,

Yours hamfully,
W. E. COXON (6AG).

NOTES.

Over the last few weeks very little has been done in the way of dx, not because it was not there, but, as you know, because even hams have a bad habit of wandering on these hot, sultry evenings, and when they return, instead of seeing a single-ended rig, as was there before, they find a push pull parallel arrangement. Of course, this is not intended to apply to anybody in this State!

A few of the old-timers were heard on Sunday morning early some time ago trying to catch the elusive Spaniard, but nobody was heard to work one. Among the dx worked hr lately were G, OH, YI, PA, U, F, CR, and sum Yanks.

6AG was qrl wid talkies, but as that job is finished for awhile we want to hear your sigs agn. 6CP was heard putting out some fone, and most of the time it was fairly f b stuff. Keep at it, o m. 6SA still pining to hear the results of that contest. 6JK—oh! where is my wandering boy tonite? Sa o m, the air has still plenty of room fer ur sig. Jack has gone qrp wid a pa'r of 245's in push pull. 6LJ

still on the missing list. 6RL not as consistent "as he used to was"; believed to be rebuilding again. 6CX will be bursting forth with a new xtal rig. Sum job, too; will stand about five feet high, and is fully self-contained. 6GM qrl at present; likewise 6MU, 6GW, and 6PK with examination. 6LK has his nose into the textbook; says he will have a suit adorned with brass buttons yet. 6KR still manages a little dx.

The class for the members of the W.I.A. wishing to secure their A.O.P.C. is well under way, and a number of new hams for VK6 will soon be issued. Best of luck, gang.

NORTH SUBURBAN RADIO CLUB (VK3FY)

The meetings of the above club to be held during January will take place on the 8th and 22nd inst. at the clubrooms, 354 Rathdown street, North Carlton, to which all interested are invited.

Members of the club recently spent a week-end at Boronia with a portable mitter, using 45's in a tnt. Batteries were used throughout for the receiver and transmitter, and proved very satisfactory.

Numerous qso's were established, and on the whole a very enjoyable week-end was spent. The only regrettable incident occurred at 1 o'clock each morning, when the president began to dream about dx. And, believe me, he could talk. 'Twas r max.

On Saturday night, the 20th inst., 3FY will conduct an all-night broadcast on 200 metre band, and will continue until 10 a.m. on Sunday, the 21st inst. A lookout will be kept for other hams on the air, and we will be very pleased to qso.

Slow Morse code is still being continued on 80 metres from 8.15 till 9 p.m. on Wednesday evenings, and judging by the reports received it is becoming very popular with intending VK3's.

3AS and the Secretary are spending the Christmas vacation in Vis, and hope to meet a number of the VK2 gang during their stay in the 'Arbor City.

By the time this copy goes to press one of our members, Mr. Howard Harrison, will have taken the solemn vows of matrimony, and we all join in wishing him and his wife the very best of good luck. And may he still attend our meetings regularly. (Take note, XYL!) At the last meeting members presented Mr. Harrison with a handsome crystal bowl.

For further particulars concerning this "live wire" club write to the secretary, Wm. L. Wonder, 12 Smith street, Thornbury, N.17.

VICTORIAN COUNTRY NOTES

From Northern VK3.

By 3WE.

3LH got quickly to work after changing qra from Merbein to Birchip —over 50 qso's for last month, but not satisfied; says he left the north "ostensibly" to dodge qrm, and struck it worse in Birchip. (Local engineer, 3CH, please note.) 3CH still aspiring to "B" class, but at present qrl locating "blowflies" in his Navy type A.C. genny, and building a freq meter de luxe. 3WE going again after being burnt out a few months ago; qrp 2-stage xtal from local D.C. on 3500, but packs a hefty wallop. Save the pieces when that 500 genny starts. 3CE is at last going xtal—got the pebble from Max t'other day, and proposes to try out the new harmonic doubling rig and give the Hartley a rest. 3PY has rebuilt his outfit. What! Again? Now uses the new harmonic circuit; says he can get good harmonics down to 5 c. What about ¾ cm.? 3KE has greatly improved his perl lately; recently he put a coupla yl's on the mike. Says they're his sisters! 3ZL still ragchewing R. Max on 80. How many kw, Eric? Usually has a long string of dx to report, w's, g's and whathaveyou? 3KR has temporarily ceased to worry bcl's on 200. Now has a backwave on 80. Also has a penchant for qso yl's on Sundays. Talking of yl announcers, 3WE put over a good one on 80. Got a yl to call cq. Did they answer? The resulting qrm was awful. The night club at 3FY strained all valves to get back. And the bcl reports! Bill has patented the idea. 3LH is changing from television to "smellevision" to locate the hum in 3CH's carrier. 3OR been qrl with floods lately, and qro banjo solos. Believe he's a connoisseur of talkie reproduction. Ask Ken.? 3JV—"Anyone knowing the whereabouts——." But perhaps Arthur, like many others, has forsaken 80 for

higher freqs during the qrn period. 3CD heard fairly often with a good, hefty pdc note, fb, Johnnie. Busy rebuilding to 3-stage qro rig. 3AN not heard much of late. 3KI still heard with r max cw sig. Vy fb, John, but why the backwave? Hi!

The Northern gang held another little convention in Birchip lately, when 3KR and 3CE, complete with yl's and in need of a few spare parts, paid a surprise visit, but found everything screwed down. Duly qso'd 3OR de 3WE. Photo elsewhere shows the hard dials of the gang.

3KR has made a coupla trips to 3CE lately—about 80 miles—we refuse to disclose her Christian name.

Just about the time these notes are published (?) the Mallee gang expect a visit from our genial State President, 3TH, who is making a special trip up to see the "nuisance" (ask 3LH his identity) and to learn how to build a really fb 200 mx xmitter. We hope to surprise him in more ways than one.

Conditions generally in the north have been bad on all freqs during the past few weeks. 3500, except for short and irregular periods, altogether impossible for qrn. 7000 not so much qrn, but high speed fading very bad. Nothing at all heard on 14,000.

Following up a suggestion made to the Editor that VK3 be zoned for notes, the Birchip gang will stand by for rag chew any time. Call 3CH on 200; 3LH and 3WE on 80 or 40 after 2230 any nite; 3LH on 40 any time after 1930. Or scratch a few lines to 3WE.

VICTORIAN QSL BUREAU

Cards for the following are on hand at the Victorian Qsl Bureau, 23 Landale street, Box Hill, Vic., and will be forwarded on receipt of stamped envelope:—3AB, AH, BD, BX, CR, CY, EM, ES, ET, FC, FM, FY, FW, GX, GU, JM, JN, JW, JX, JY, KA, KQ, LM, LP, LS, LY, MH, MM, NC, NG, NM, NR, OM, OT, OY, OZ, PA, PR, QZ, RB, RN, RT, RW, TP, UJ, WO, XK, XX, YL, YR, YW, ZM, ZO, ZL, ZX, ZY, Graf.

A card worth a place on any wall is that of VS3AB. The card, which is of a highly decorative nature, is emblazoned with the coat-of-arms of the Royal owner.

R. E. Jones, VK3RJ, Qsl Manager.

Q.R.P. CLUB NOTES DECEMBER, 1933

Many moons have passed since our last club notes appeared, but henceforth we hope to be on the job regularly. This is an excellent little magazine, and it is up to you clubites to do your bit by taking a copy each month—if only to see what the rest of the gang are doing.

Allow me to introduce the new VK secretary and organiser, Jack Moyle, of VK2EZ. Now that the uproar and barrage of dead marines have died down let me explain that the op here, imbued with that restlessness that made Bill Shakespeare (or was it Ned Kelly?) say, "In the spring a young ham's fancy lightly turns to thoughts of DX," invested in a few "B" batts, and gave his half-starved 245 the thrill of its young life. At 240 volts the 100 mill meter went hard over—and, boy, that meter cost the best part of three greenbacks, so she shouldn't tell lies. Anyway, that put finis on 3NQ as far as QRP club went, and now 2EZ is the big shot, the man to whom you will send your membership applications and your notes each month. Keep him well supplied, boys; he will be writing these notes in future, and wants some gossip to put in them. ZL2FE has also increased his power to 12 watts, so a new secretary and headquarters station will have to be appointed in Maoriland. One hears a rumour that 2JJ and 3CL have been using QRO. The sec. would like to hear from these members. Now for some scandal:—

2EZ wonders who's pinched all the DX on 14 MC. Everybody seems to be getting a share but Jack, who can only hear a few R3 ZL's. 2GT chasing 14 MC DX. Heard YH2RV calling him, but unable to contact owing to QSC. 2KZ, using 5 watts, raised two W6's on 3.5 MC, and received QSA5 report. Good work, Mac. Works Yanks by the dozen on 7 MC. 2YA now at Auburn, with AC laid on, and has gone QRO with pair TB 04/10's. Ask Rex how he enjoyed himself at Wyong Field Day on Nov. 5th. 2YI bit of a will-o'-the-wisp; changes his QRA every couple of months. 3CD now has 3HL genny, and is looking for an engine to work it; soon be QRO then. 3EP complains of QRN on 3.5 MC, but manages to hook a ZL now and again. Hartley refused to go well on 3.5 MC, so he built a

TPTG, which perks fb on 3.5 MC, but punk on 7MC. So what's the use? 3JV gets R7/8 reports from VK6 on 3.5 MC, so isn't worrying any, but wonders if the ZS's can hear him. 3PG sez DX on 14 MC is simply awful. Uses 4 watts, and all he's been able to raise has been three J's (R6 from one) and three PK's, one of them four times. Some people are never satisfied. Norm read somewhere about some ham getting WAC in 3 hours 17 minutes 22½ seconds, or something, and now his ambition is to do the trick in 3 hours 17 minutes 22 seconds dead. Of course, the other fellow used about half a kilo., but that's a mere detail when you are a QRF fiend, hi!

Well, that's all, lads. Give Jack your support, same as you have done me in the past. Cheerio! Cw on the air. Vy 73 from Jim, VK3NQ.

PORTABLE POWER SUPPLY.

We have received a letter from VK6SA regarding the article printed in the November issue of "Amateur Radio," as follows:——

"The dimensions given for the transformer are very far out. Therefore I thought it would be advisable to give the correct specifications for same.

"The dimensions of core should be 1 in. x 1¼ in., built up from laminated sheets measuring 2 in. x 1 in. The primary winding (for 6 volts) consists of 50 turns of 18 gauge DCC wire, and the secondary 3000 turns of 36 gauge enamel wire.

"The primary must be well insulated from the secondary, several layers of Empire cloth being suitable. The secondary should be wound in layers, and each layer separated by a sheet of thin paper. "Greaseproof" paper is very good for the purpose. Care should be taken that the end turns of each layer are not allowed to slip down at the sides and short on to lower layers. The winding may be placed on a cardboard bobbin, or wound on a former, and afterwards taped up. In either case it is advisable to soak the completed coil in a bath of boiling paraffin wax till the latter ceases to bubble. A better insulating compound, and one that has a higher melting point, is made by mixing two parts of paraffin wax and one part of resin.

INTERNATIONAL NEWS

B.E.R.U. Contests, 1934.

Last year the VK entry in the B.E.R.U. contest (1933) was an excellent one, and the results did credit to Australian amateur radio. This year we hope to have even better figures and more stations participating, so it is up to every ham to do his or her part.

Particular notice should be paid to rule 15; this covers all members of the W.I.A. and A.R.A. (N.S.W.). Forms (the official entry and log) will shortly be available, and may be obtained from the VK official B.E.R.U. representative, VK2HC, or from the local State sub-representative. They are:—N.S.W., VK2YC; Victoria, VK3WL; Queensland, VK4GK; South Australia, VK5GR; Western Australia, VK6FO; Tasmania, VK7CH. If the request is by post, kindly forward a stamped, addressed envelope for reply, etc.

General Rules.

1. There will be three distinct contests, known as:—(a) Senior (High Power) Transmitting Contest; (b) Junior (Low Power) Transmitting Contest; (c) Reception Contest.

2. The judging of entries will be carried out by an R.S.G.B. awards committee appointed by the council of that body. In the event of any dispute the president's decision will be taken as final.

3. Competitors may enter for both the Senior and Junior contests, but individuals may win only one of the trophies. They will, however, be eligible to receive certificates of merit in both contests.

Rules for Senior (High Power) Transmitting Contest.

1. The contest will extend from 00.01 G.M.T. Saturday, February 3, to 24.00 G.M.T. Sunday, February 4, 1934, and will be continued from 00.01 G.M.T. Saturday, February 10, to 24.00 G.M.T. Sunday, February 11, 1934.

2. The contest will be open to all British subjects who are fully paid-up members of either (a) the R.S.G.B.-B.E.R.U. or (b) the Honorary Affiliated B.E.R.U. Society in that part of the Empire in which they are resident at the time of the contest.

Note.—The following are the honorary B.E.R.U. affiliated societies:—

Radio Club of Ceylon and South India, Radio Association of Jamaica, Radio Society of Great Britain, South African Radio Relay League, Wireless Institute of Australia, Hong Kong Amateur Radio Transmitting Society, North Alberta Radio Club, New Zealand Association of Radio Transmitters, Westmount Radio Club of Quebec, Malayan Amateur Radio Society (Kuala Lumpur).

3. All amateur frequency bands may be used, providing the input to the valve delivering power to the aerial is not in excess of that specified on the competitor's licence, and providing the entrant has permission to operate his station on the band (or bands) in question.

4. Only one person will be permitted to operate a specific station for the duration of the contest.

5. The declaration at the foot of the entry form must be signed by each competitor.

6. Points will be scored for each contact with an Empire station located in a separate prefix zone, providing the distance between the two stations exceeds 1000 miles. The number of points which may be claimed for each contact is listed in the prefix zone chart, which accompanies the official copy of the rules.

7. In the event of a competitor not being in a prefix zone, he shall score the same number of points for each contact as he would if located in the prefix zone nearest to his station.

8. Ten points will be added to the score obtained for each initial contact with another prefix zone, providing points for such a contact are specified in the zone chart.

9. Only one contact with a specific station may be made on each band during the contest.

10. An exchange of reports (qsa, qrk and tone) must be effected before points can be claimed for a contact.

11. Contacts with ships or with unlicensed stations, located in countries where licences are obtainable, will not be permitted to count for points. The decision as to whether a station is to be classed as unlicensed will rest with the R.S.G.B. Awards Committee.

12. The B.E.R.U. Senior Trophy will be awarded to the person scoring the highest number of points. In the event of the winner not being an individual member of the R.S.G.B.-B.E.R.U., the trophy will be forwarded to the president of his or her B.E.R.U. affiliated society, who will arrange for its award, custody and return to London prior to July 31, 1935.

13. Certificates of merit will be awarded to the first three stations in the contest, and also to the leading station in each prefix zone, providing at least three entries have been received from the zone in question.

14. Entries must reach the headquarters R.S.G.B.-B.E.R.U., 53 Victoria street, London, S.W.1, not later than April 30, 1934.

15. Persons who are not members of the R.S.G.B.-B.E.R.U. must state in writing that they were fully paid-up members of their local B.E.R.U. affiliated society at the time of the contest.

Rules for Junior (Low Power) Transmitting Contest.

The rules for this contest are the same as for the Senior contest, except for the following:—

1. The contest will extend from 00.01 G.M.T. Saturday, February 17, to 24.00 G.M.T. Sunday, February 18, and will be continued from 00.01 G.M.T. Saturday, February 24, to 24.00 G.M.T. Sunday, February 25, 1934.

2. The input to the valve delivering power to the aerial must not exceed 25 watts.

3. The B.E.R.U. Junior trophy and certificates of merit will be awarded in a similar manner to that specified under rules 12 and 13 of the Senior contest.

Rules for Reception Contest.

1. The contest extends throughout the four week-ends of February, 1934, each period extending from 00.01 G.M.T. on Saturdays to 24.00 G.M.T. on Sundays.

2. Points will be scored in a similar manner to the method defined under the Senior Transmitting Contest rules.

3. The same station may only be logged once on each band during the contest.

4. To count for points the call sign of the station being called and the strength and tone of the signals of the calling station must be logged, together with the report which is given by the calling station to the station being worked.

5. Cq and test calls will not count for points.

6. Only calls from Empire stations located outside the zone of the competing station will count for points.

7. The B.E.R.U. receiving trophy and certificates of merit will be awarded in a similar manner to that specified under rules 12 and 13 of the Senior contest.

8. The conditions of entry are as laid down in the rules of the Senior transmitting contest, except that the entrant must not possess an amateur transmitting licence.

BRITISH NOTES FOR DECEMBER, 1933

(By G6CL via G5YH via ZL4AO via VK3RJ.)

December, month of darkness and cold shacks, has produced little of outstanding interest.

The 3.5 MC contest reported upon last month was won by Mr. H. Collin, G2DQ, who, using an input of 10 watts, succeeded in scoring nearly 2000. His contacts included two with North American stations. Mr. R. A. Bartlett, G6RB, and Mr. J. Wyllie, G5YG, were placed second and third. Mr. G. C. Allen, Brs250, was the leader in the reception side of this event. The T & R Bulletin for January will contain a review of the year's work and articles on grid modulation, a four-valve Empire short-wave superhet and Magnetron oscillators.

The first part of a special article on interference elimination was published in the December issue. Copies of this issue will be sent to all non-members interested in the problem of overcoming BCL interference.

Mr. A. D. Gay described the master oscillator drive circuit used for his monthly calibration service. To correct an impression which was conveyed in the December issue of "Break In," we would mention that calibration services were first instituted by the R.S.G.B. over five years ago. The present service was not introduced following the example of other organisations. For many years British amateurs have been "frequency conscious," and this service was only introduced as a further aid to enable them to keep their frequency measuring devices accurately calibrated.

NEW ZEALAND NOTES

Via Z14AO, VK2HC, VK3RJ.

The election of the N.Z.A.R.T. office-bearers for 1934 resulted as follows:—President, Mr. W. G. Collet, Z14BP. Vice-presidents: Auckland, Mr. E. K. McKay, Z11BE; Wellington, Mr. W. M. Hall, Z12BH; Canterbury, Mr. R. T. Stanton, Z13AZ; Otago, Dr. R. B. Dodds, Z14FK. Headquarters will be located at Auckland.

Recent concessions granted by the Post and Telegraph Department allow New Zealand amateurs a high frequency telephony channel from 28,000 to 28,500 KC, and a type A2 modulated signal is permitted on amateur frequencies above 28,000 KC.

GERMAN REPORT

The following is extracted from a letter received from the German Ham organisation, DASD:—

In March this year the German Government decreed a general interdiction of amateur transmissions. Organisatoric questions should be cleared without any distortion. In May about 30 hard-boiled hams got a preliminary licence, in part even with their ancient calls.

In the meantime the DASD (Deutscher Amateur Sende Dienst) was acknowledged by the Government to be the only authoritative office for all amateur things. Licences are available only by the DASD. Like their friends in foreign countries, the German amateurs are able to work in future in the open light of publicity, and we owe to our Government sincere thanks for freeing the German short wave enthusiasts.

After having been asked from the members some time before inquiries for licences. in the morning of August 27 about 180 German amateurs, the licences were lying on the table. During a general meeting on 80 metres this day the fellow-world had been told by "qst" the pleasing fact that the final licensation of amateur transmitting in Germany had been done. The giving of licences is to be continued according to the coming inquiries.

At last we are not forced furthermore to hide fearfully our qra's and names. Already in the next issue of the Radio Amateur Call Book numerous addresses of DASD amateurs will be published, so that it will be possible for our foreign friends to find immediately the qra of any heard D station. Qsl cards, however, will be exchanged now, as before, without fee.

The DASD address is:—Deutscher Amateur Sende Dienst, Berlin, W.57, Blumenthalstr. 19.

R.A.A.F. Wireless Reserve Notes

Federal Notes, by the C.O.

The year 1933 has certainly produced many changes for the betterment of the Reserve. The major issue, as we all know, has been the change over from an amateur Reserve to the official Air Force Reserve, and the enrolling of experimenters into that Reserve. This change has produced many advantages over the old system, and the unit has already benefited by them. The Victorian District was the first to get going, and has proved an interesting experiment prior to the organising of the other districts. It is expected that the majority of States will have their members fully enrolled early this year.

In order that every member will have a definite aim each year a complete training syllabus and an annual examination for same have been drawn up, and a copy of each has been supplied to the District Commanders. These will simplify the training considerably, as each D.C. will understand exactly what is required of the members each year, and will be able to arrange his own training programme to suit. As long as he covers the necessary ground in 12 months to fulfil the programme he can make his own arrangements as to the educational system best suited for his district. After that period practical examinations will be held, and each reservist will be required to pass out as being up to standard.

There are many interesting subjects listed on the programme outside W/T operating, such as aircraft W/T apparatus, ground signalling to aircraft, etc. They will be treated in books, leaflets and papers, and will be issued to each individual. Reservists will be required to self-educate, to a certain extent, in several instances, but all subjects will be of great interest and value to members. The object held in view by the Air Board is the avoidance of any weary repetition and the creating of enthusiasm for learning. It might be said that the member who passes these examinations will be entitled to look upon himself as an operator of first-class ability, and one with a good knowledge of signal procedure and organisation.

Under this new training scheme provision has been made for an Air Force W/T station, operated by the permanent operators, as the Reserve H.Q. station for the training of the D.C.'s and issuing of orders. This has many advantages, including the promotion of a definite understanding between the permanent and reserve forces. This change is expected to take place early in January. The systems and routine of working will be similar to that used at the C.O.'s station at present.

For the third time during the past four months the Ramsay Trophy test has been broadcast from 1A1. This time with success, according to the reports received. It has been unfortunate that the previous tests were failures owing to poor receiving conditions. However, the third test was fair to all, and from the reports received the winner of the Cup will be decided. The results will be announced next month. Next year the winning of the trophy will not be so easy! It will be awarded on the year's work and general efficiency, as based on the D.C.'s quarterly reports.

Arrangements are being made for the training of members in the Eastern States, especially N.S.W. and Victoria, at one of the local squadrons, for periods up to three weeks annually. This should prove mighty interesting, and members will have an opportunity of learning all about ground and aircraft W/T equipment, as well as the other signalling systems used by the R.A.A.F. In order to provide for the other districts' members' education in these subjects inquiries are being made at H.Q. into the possibilities of instruction whenever aircraft fitted with W/T apparatus visits their district. However, final arrangements for Interstate training have not been made as yet, but it is hoped to arrive at something that will prove equally as interesting as for the Eastern States.

The month of January commences the traffic awards, as announced last issue. In February the first awards will be made. From a certain authority I am informed that Victoria has already started the ball rolling, and several hundred messages are being handled weekly. This shows fine spirit and enthusiasm, but since the awards are based on the ratio of mem-

bership to messages the other districts stand an equal chance, and some dark horses might give the Victorian fellows a big surprise when the awards are announced. Therefore "go to it," and make the totals bigger, and be sure of your district, section and self!

SIXTH DISTRICT NOTES.

By 6MN.

6FM, at Wiluna, had his mast struck by lightning, and was off the air for ten days. No other damage done, however, and is back again with the usual sock. 6FL has been shifting goods and chattels, and will soon be heard again; he is still in Geraldton, with a fb rotary convertor working off the D.C. mains. 6BO, at Carnavon cannot work simultaneously with the local cinema. He reports overseas stations coming in well, but finds it hard to work VMF; very patchy. One watch signals are R8-9 and the next not a sound. 6FT, 6RL, 6LK all studying for first-class commercial tickets, and are off Reserve work pro tem. Hope to have 6RA and 6RW enrolled by next issue. 6LJ very enthusiastic cricket player; so radio takes second place. It's a pity such a good fist should be wasted wielding the willow and not the brass! 6Z1 and 6Z2 maintain regular watches, and pile up traffic totals. Both stations are moving to 6555 kcs. A meeting of the local Reservists is to be held in 6Z1's shack in January. Even though VMF has a small membership that is not going to stop them returning the highest membership-traffic returns and bag a few awards.

SEVENTH DISTRICT NOTES.

By 7Z1-7RC.

It was rather unfortunate that 7Z1 was unable to take part in the Ramsay Trophy broadcast on December 3rd, but he was away from home for the day. However, by being absent, he left the way clear for someone else to win it (!) We now have five very active members here who are proficient in the R.A.A.F. procedure. A broadcast in procedure work is given each week to these members by 7Z3 (7JW), who obtains these from 7Z1 on Saturdays and relays them on Sundays on 3.5 mc. According to some of our members the other district will not be in the monthly awards in "Amateur Radio." except to come after VMG in the list; but that remains to be seen! After the New Year it is intended to make the broadcasts on a week-night and keep the Sunday mornings open for traffic and exercises. Any amateurs desirous of joining up with Tasmanian District of the Reserve are invited to apply to VK7RC for further particulars.

A HIGH QUALITY AUDIO AMPLIFIER

By Bruce Mann, Quambatook.

1.—Level Response Curve.

Part II.*

Each speaker of a multiple group has a different resonant frequency. To cite an example, say a pair are resonant at 80 and 100 cycles respectively, and a 100 cycle note comes through, the 100 cycle speaker will move very freely and exaggerate that note. Now the voice coil of a speaker acts as a dynamo, generating an EMF opposite in phase to the signal current. The resonant speaker generates a large EMF which is opposite in phase to the signal. Now, as the speakers are connected in parallel, this back EMF is fed to the non-resonant speakers, and reduces their amplitude to such an extent that the overall output of the combination is practically level.

2.—Greater Efficiency.

For single speakers their response is governed by their mass and stiffness. Thus, to maintain the stiffness, the mass increases as the square of the area. Now, speaking broadly, efficiency increases with the area, thus to increase efficiency by increasing the size ruins the frequency response. But by using multiple small speakers the area is increased without increasing the mass disproportionately, thus greater area is obtained without spoiling the frequency response. With dual speakers the efficiency is as the square of one, and with triple speaker almost as the cube of one.

3.—Greater Power Handling Ability.

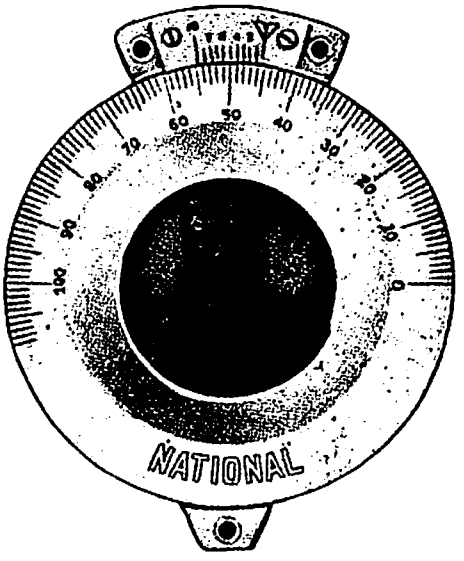
In any dynamic speaker the amplitude of the voice coil is definitely limited. Thus with the maximum permissible amplitude dual speakers will give approximately four times the output of a single speaker.

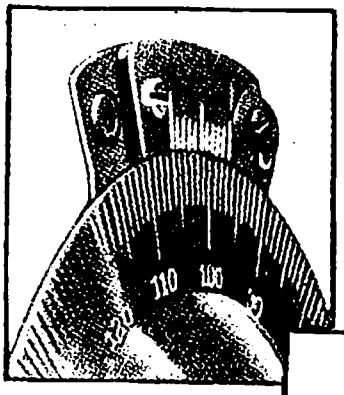
4.—Less Harmonic Distortion.

Dynamic speaker field gaps are not excited right across their width; the

*Continued from page 25, Dec., 1933 issue.

PRECISION FOR H. F.





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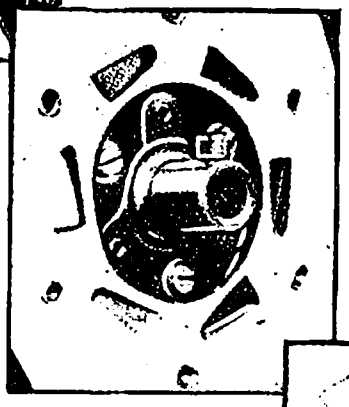
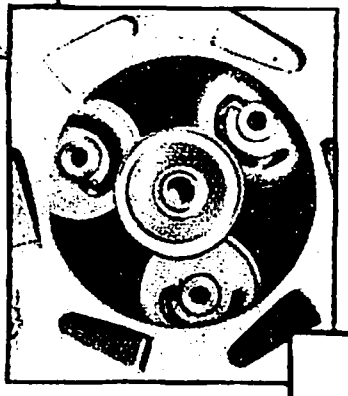


INSULATED COUPLING.

This new feature not only insulates the dial, thus electrically isolating condenser rotors, but also protects both condenser and dial from mechanical misalignment.



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flux density falls off towards the edges of the gap. It can be seen, therefore, that on large volume the voice coil enters the region of weaker flux, the voice coil movement becomes disproportionate to the signal, and harmonic distortion is the result. However, with dual speakers the amplitude for the same output as a single speaker is only one-quarter, so harmonic distortion is very much less likely to occur.

5.—Better Attack.

Oscillograph tests prove that a single speaker will make about five or six vibrations, when only one is supplied by the signal at or near its resonant frequency. If, in a multiple arrangement, one speaker makes a spurious excursion, it generates an EMF that feeds current to the paralleled speakers in opposite phase, so that they move in opposite directions and balance out the introduced vibrations.

In conclusion, just a few points on the mounting and balancing of the speakers to obtain the best results.

Multiple speakers should always be mounted as close together as possible on the baffle.

As air waves must have as short and as free a path between the cones as possible, no grill cloth on the baffle should intervene between them.

The speakers must be connected so that their cones move in phase. To test for this, excite the fields and connect a battery across the moving coils. If each cone jumps in the same direction, then the connections are correct. If, however, one jumps in the wrong direction, reverse the leads to either the field or voice coil.

Careful attention to the adjustments of the circuit and the mounting of the speakers will result in a finished amplifier of which the owner will be justly proud.

RANDOM RAMBLINGS

By QRZ.

Five Minutes on 20 and 40.

Let's try 40 first. . . . OK. . . . Yes, thought it was a KA; real typical T1 note! . . . 3ZX! what is he doing back on the air again? . . . How the heck does KA1HR get that note? Anyway, it's a bit better than the old chaffcutter. Swell ops there. . . . This first sounds like 2FY. Pick it out of a hundred. . . . ZL1GX on CC or MOPA! Wonder if he is still QRP with 75 watts. . . . Static fairly bad to-night. . . . Why doesn't 3ZL call CQ instead of CEK? . . . Not much doing on 40. Let's try 20. . . . 3KX calling YH1RV. Wonder how many watts makes that sig R9 here! . . . OK1BC calling 2QA—was R7 here last week, but only R1 now. . . . There's 5LD right under 3KX now; note pretty rough too. . . . That was 2XU just signed off. Wonder if it's a G or an OA he is working. . . . 4RV has nice note and fist down on this band. . . . South Americans seem very scarce. . . . 2HW started up now. . . . It's good to see the number of VK's using CC now. . . . 2HY now. That's a better note than last year's, OM! . . . What's this—CQ DX, everybody's calling. . . . 3HG R9; guess he isn't in the QRP club now! Nice, hefty dc note. . . . 3JJ's the lucky one; that's G2YL calling him. . . . Why can't I hear YH1RV? 3KX is still working him. . . . 5JO, CC under VK2YL, who sounds like that raspberry I've heard people talk about! . . . 5MU must be ill; I haven't heard him to-night. . . . Wish some of these VK stations wouldn't sound so much like DX. . . . Let's try 40 again. . . . Yanks pretty scarce this time of the year. . . . H'm! only another commercial in the band. . . . That's fb CC ZL3AR. . . . Gee! what's KA3AA using there? Blocks detector here. . . . Another of those optimists, 7PA calling KA1HR. . . . That note is very ripply, 2DA. . . . Yes. 2VG has some sock. . . . There's 2EG working 2XQ, with bugs running warmish. . . . That's KA8AA now with another type of note somewhere in the vicinity of 500 cycles. . . . Let's try 20 again before switching off. . . . Pity YI7RK doesn't use CC; could copy him fb then. . . . Oh, gosh! hear that power leak. . . . QRT now, and QSK. . . . 73 and success to "Amateur Radio," the hams' own magazine.

[Dear "QRZ,"—We do not know who you are, nor do we care: but, since you elect to remain among us, we suggest that you carry on in future issues with criticisms, as above. There is certainly plenty of room for a scribe such as you.—Ed.]

ZS4U is particularly anxious to QSO VK stations, whom he asks to QRX for him on 20 metres from 0800 G.M.T. to 1100 G.M.T. every day except Sundays.

Why Not Try the 28 MC?

By G. B. Ragless, VK5GR.

With the present rush to 56 mc nearly everyone seems to have forgotten that we amateurs still possess a region near 10 metres known as the 28 mc band. One thing in favour of the 28 mc band is the fact that a very small amount of new gear is needed, for most receivers employed on 7 and 14 mc work quite well. In fact, it is my firm opinion that the stability of the usual ham receiver can be gauged by its performance on 28 mc.

One thing that attracts some hams to the higher frequencies is because there are greater technical difficulties to be overcome.

Recent issues of "QST" show that the 28 mc band has been very popular in the "States" during the past few months, good contacts being reported over the whole country. In the RSCB "Bull" one reads of the fine work done all over Europe (also Africa), where the number of active 28 mc stations is very large. Both of these parts have been experiencing summer, and it seems that for consistent 200-2000-mile work that is the best period of the year. We have just commenced the same season, and can reasonably expect conditions to be suitable for Interstate working, as has been the case during the two previous summers.

Perhaps a few particulars of the results here in South Australia during last November and December will prove of interest and assist anyone wishing to start up.

The best time for Interstate seemed to be between 9 a.m. and 5 p.m. AMT, when all States have been heard during the one Sunday!

Generally VK4 was the most consistent, one Queenslander remaining R8 for four hours, and contact could be made continually.

Victorians reached R8/9, but were apt to fade, while VK2 was consistent, and received after darkness on odd occasions. West Australia and Tasmania were up to standard, but, due to the small number of stations operating, no very definite information about them could be obtained.

Going on my own observations, I feel certain that no other band could provide better Interstate signals around midday during the summer months.

Most of the work on 28 mc is done at week-ends to make use of daylight between points, but for dx (with exception of Asia) it is probable that one end would have to be in or near darkness.

Although only the 2800-2900 kc half of the band is generally used, QRM is practically unknown (!), and QRN is nil. This makes it easy to copy weak signals.

Strong harmonics from 14 mc Interstate stations were heard, also JNB's when conditions were very good.

Give it a try, gang, during the next few months. Remember strong ground waves for portable work, good Interstate signals, and possible dx, all under perfect operating conditions.

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Join now! Drop a note to the Secretary, W.I.A., Kelvin Hall, Collins place, Melbourne, C1, and request him to send you all details.

Interested persons Interstate will find the address of their State W.I.A. H.Q. elsewhere in this issue.

HARMONICS.

YI7RK reports he is QRX for VK and ZL Qso's each day from 1200 to 1300 GMT on 14 MC band. QSL, via YI2FU, R. A. Underhill, 70 (Br) Squadron, R.A.F., Baghdad, Iraq, Mesopotamia.—VK5J.D.

* * * *

Here's a dx that some chaps might be looking for. XU1A is the call of R. J. Prata, c/o Hong Kong and Shanghai Banking Corporation, Shameen, Canton, China.

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● RADIOTRON Type 865 is a 7.5 watt screen-grid, low-power transmitting tube for use as a radio-frequency amplifier, especially for frequencies above 3000 kc. It is also very useful as a crystal-controlled oscillator. Filament volts, 7.5. Maximum plate volts, 500.

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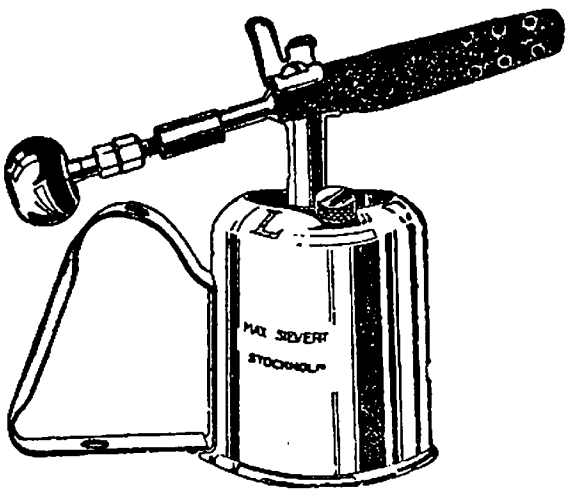

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EDITORIAL

When that famous Greek slave and philosopher, Aesop, wrote his well-known fable on "Unity is strength," he little knew of the countless times it would be quoted, of the essays that would be written on it, and of the speeches that would use it as their theme.

We can hear our readers saying, "—— but last month's editorial commenced like this. Can't these editors find something new to write about?" True! But is there anything new under the sun? This expression has stood the test of 22 centuries. Again, surely the time is just opportune, our Federal Convention has just concluded, the delegates, representing each State, have deliberated with the object in view of furthering the interests of the W.I.A. and the making of a greater unity within the ranks. Remember, "UNITY IS STRENGTH." The A.R.A. in New South Wales, which is now affiliated with the W.I.A., and the W.I.A. in all other States stands in the interests of, and for the good of, the amateurs of Australia. The P.M.G. recognises the Institute and the Institute ONLY, in all contentious matters appertaining to amateur radio. Each State forms its own domestic policy to suit the requirements and fulfil the especial needs of its own hams. Broadly speaking, this policy is to make the Institute, which, don't forget, is my Institute, your Institute, our Institute, of 100 per cent. usefulness to every member in Australia. Now this policy is, or should be, governed by the members themselves. It is advanced by the council, which is elected by the full membership of the division. If any member is not in entire agreement with any part of the organisation or policy of his division, he should, no—more than that—it is his DUTY, to see the councillors, whom he helped to put into office, and request the necessary changes to be made. If the alterations will be of benefit to the majority of the members the policy will be immediately amended accordingly.

Thus each member not only has a bulwark behind which he can shelter in times of trouble, not only has a friend and an intermediary if he needs help, not only enjoys the companionship and gains materially by the exchange of ideas with his co-members, but also he can help to mould the present and future policy of his Institute through its essentially democratic form of government. Therefore, we appeal to every sane-thinking ham, how can there be room in Australia for any other so-called amateur organisation? They cannot receive P.M.G. recognition, nor can their aims be higher or of greater benefit than ours. There is absolutely no legitimate reason why every ham, yes—and every potential ham, in Australia should not be a member of the Wireless Institute of Australia. With a completely united front, voicing, to the powers that be, the opinions of EVERY amateur in the Commonwealth on any subject, our opportunities for advancing the ham cause and consolidating its present position will be immeasurably greater, for—"UNITY IS STRENGTH."

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Interested persons Interstate will find the address of their State W.I.A. H.Q. elsewhere in this issue.

Revamping the O-V-1 Receiver

By VK3ML.

Even in this era of single signal supers and high selectivity receivers the old faithful two tuber still stands in favour amongst a large number of hams. This may be due to one of three things. Firstly, few hams can afford to pay out hard cash for six to ten tubes; secondly, such receivers are not the easiest to get going; and thirdly, in very few cases are such ultra selective receivers necessary. We have not the QRM and melee that other countries have to cater for, and, therefore, the Australian ham can afford to sacrifice selectivity for simplicity. After all, when one examines a super-het, has it got the enormous gain that one might expect from six tubes? How many tubes are actually amplifying? Out of the six only 3.5 tubes actually contribute to the gain. The rest give to the super-het its name for selectivity. As stated above, this fine array of tubes is not absolutely necessary. To quote a specific example: During the last ARRL international contest the author actually worked 303 W stations in 42 hours working time, using a simple 224a-227 combination receiver. Situated in Malvern, where there are at least a dozen constant R max signals, this spoke well for the two tuber. Of course there is a lot in the saying that one must know one's receiver. Granted, but by juggling the combination of throttle and tuning controls it was possible to make practically every Yank QSA5, which was all that was wanted. So, before considering scrapping the old-timer give a thought as to how it could be brought into line with modern receivers.

The main essentials that are to be reckoned with are (a) Stability and (b) selectivity, combined with sensitivity.

Stability.

Wabbling, creeping and rough signals can, on many occasions, be traced to the receiver. Poor mechanical construction and poor components can be blamed for the first trouble, whilst the natural tendency of the autodyne detector to creep itself can often lead to a false report being given. The question of rough signals is generally due to the design of the power supply and filter, and bad layout.

Of course, the most satisfactory method of using a receiver of this kind would be to employ a separate oscillator. This adds to the expense and to the number of controls necessary. However, we have been saved of much of this by the more modern type of oscillator—the electron-coupled oscillator. This is practically the answer to the ham's prayer for a stable RF oscillator. The receiver described below employs it as the detector stage and with utmost satisfaction. The trouble of creeping is almost unheard of.

Selectivity.

Not much could be said at any time regarding the selectivity of the autodyne detector. It is too much to expect from one tube; but compare such a receiver as this with one employing a stage of tuned RF. When used in this combination it is general practice to employ grid-leak type detection. In this manner the detector will work best on weak signals and not so hot on the strong ones. Consequently, what happens when three or four strong signals come walloping-in? The broad RF stage amplifies them and expects the detector to do its stuff as it would with a weak signal. But it simply won't do that, and we get the old complaint of detector blocking and bang goes nearly all the band. Obviously the method that would be used to prevent detector blocking would be to put a gain control in the RF stage to cut the gain down. Now, where does that get us to? We are back to something that is giving us less than the straight 0—V—1 would give. This question is open, and it is best left to your own imagination as to whether an RF stage is necessary. Personally, the writer wouldn't have an RF stage in the shack. It means extra controls, components, and the above.

A little titivating and minor alterations to the present detector and

one audio type receiver can transform it into something worth while. No receiver can be more stable than provided by the rigidity of the mechanical construction. It is only natural to expect to receive vibrating signals when one employs a metal panel made from thin sheet material. That used in the receiver measures 7 in. by 9 in. by 1-8 in. Therefore, closely examine all components that have been in operation for some time for they might have worn loose.

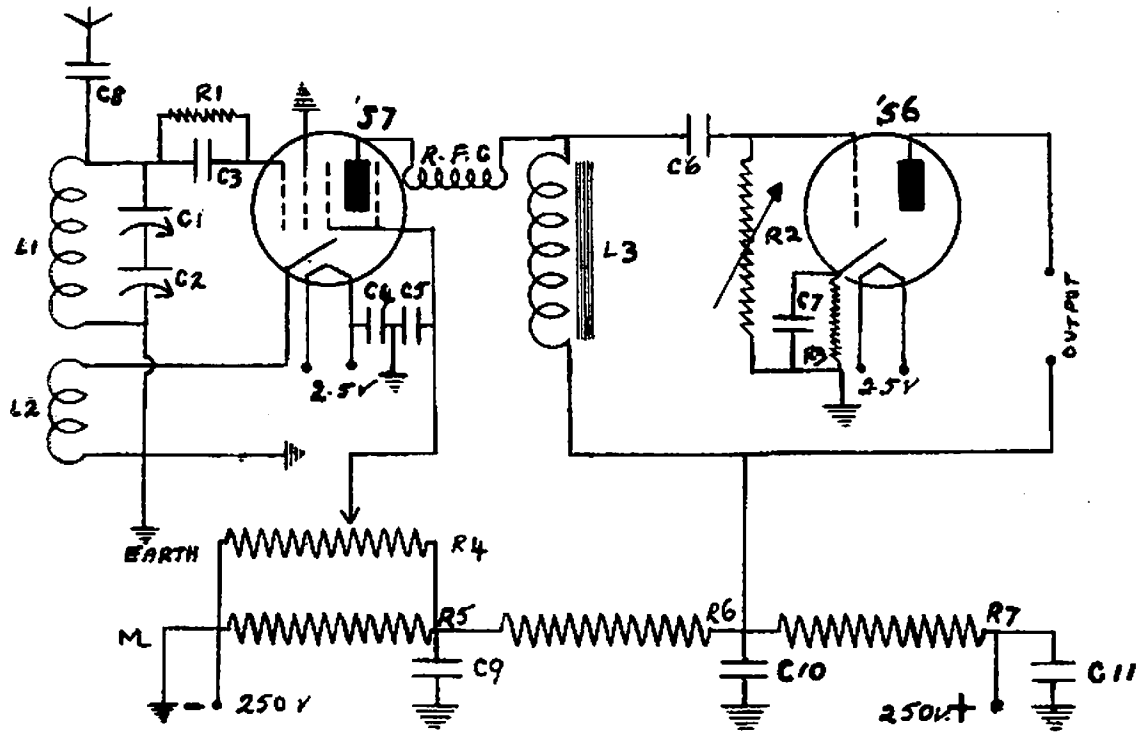
The wiring of this new receiver is quite orthodox for an electron-coupled oscillator, but provision has been made for band spreading and smooth regeneration control.

Band Spreading.

It will be noticed in the diagram that L1 is tuned to two .0001 condensers in series. One is used for the spread and the other for tuning. It must be observed that the top condenser is above earth, and, therefore, must be insulated from the panel. Such a combination allows for about a 70 deg. spread over most of the bands, which is quite enough. The greater the spread the more time it takes to cover the band, and one does not want to spend half an evening dial twisting! However, this method of tuning provides for a wide frequency coverage, especial y when the spreading condenser is shorted out. It makes the receiver most universal.

Regeneration Control.

Of all the available systems of reaction control on an EC oscillator the one used here has given highly satisfactory results. It is smooth and



C1—100 MMF Variable Condenser.
C2—100 MMF Variable Condenser.
C3—0.0001 MFD Grid Condenser.
C4—0.01 MFD 500 Variable Condenser.
C5—0.01 MFD 500 Variable Condenser.
C6—0.50 MFD 500 Variable Condenser.
C7—0.10 MFD 500 Variable Condenser.
C8—Aerial Condenser—Two-plate Midget.
C9—0.10 MFD 500 Variable Condenser.
C10—0.10 MFD 500 Variable Condenser.
C11—0.10 MFD 500 Variable Condenser.
R1—1 Meg Leak.
R2—250,000 ohm Variable Condenser.
R3—2000 ohm 1 Watt Wire Wound Resistor.
R4—50,000 ohm Potentiometer, Variable.
R5—10,000 ohm 1 Watt Resistor.
R6—10,000 ohm 1 Watt Resistor.
R7—5000 ohm 1 Watt Resistor.
L1—See Coil Table.
L2—See Coil Table.
L3—200 Henry or Higher Coupling Impedance.

silent providing a good quality potentiometer is used. However, the varying of the SG voltage reacts on the dynamic characteristics of the tube, and one must expect some slight detuning. Nevertheless, this can be neglected as the control is not used much after once being set for the particular band.

Little need be said regarding the necessary alterations to convert the present receiver, as they are so few that a careful comparison of the old and new wirings will make them quite clear. Care should, however, be exercised in the selection of the RFC in the detector plate lead. Here it is shunt feed, and only the best of chokes available should be employed.

Power Supply.

Those who have built an AC receiver have experienced the necessity for careful placement of components so as to avoid their coming into contact with wires carrying AC. However, the use of twisted flex leads for the filament wiring is generally used to overcome trouble from that source. Should the hum still persist it is recommended that centre tapped resistors be inserted and by-pass condensers connected across the filaments. Wiring resistors, R5, 6, 7, under the receiver chassis is to be recommended, as it keeps the RF where it belongs and prevents it getting back into the power supply by the capacity effect of long leads to the divider. With plenty of filter and a careful layout throughout, such a receiver will be silent down to a very low wave. Finally, it is suggested that a switch be inserted in the neg HT lead for turning the receiver off when transmitting, unless one cares for hearty bangs and clix tickling the eardrums!

Coils.

All coils are wound on tube bases, either in the crude or those specially turned out for the job.

Band.	Turns, gauge and spacing.
L1.—14MC	7 turns, 20 DCC
7MC	15 turns, 20 DCC
3.5MC	30 turns, 20 DCC
L2.—14MC	4 turns, 20 DCC spaced ¼ in. from L1.
7MC	4 turns, 20 DCC spaced ⅜ in. from L1.
3.5MC	5 turns, 20 DCC spaced ⅜ in. from L1.

Note.—The spacing given above might have to be varied to suit the aerial coupling, layout, etc. Given a coat of celluloid dissolved in amyl acetate or clear Duco, the coils will stay put for a long time.

MATRIMONIAL.

This month we have sufficient news to warrant a heading such as above.

During a QSO VK3KN was told that VK7LJ was married a week or so ago.

Next week, Bill Gronow (VK3WG), joins the ranks of the benedicts, and in April we understand Vaughan Marshall (VK3UK) is also to be married.

Both 3WG and 3UK are on the magazine staff, and we sincerely hope that their respective wives will not curtail their wonderful efforts in producing "Amateur Radio."

HARMONICS.

We regret to hear that Bruce Mann, of "High Quality Amplifier Fame" is about to undergo an operation, and trust he has a speedy recovery.

Ken. Rankin tells us that, returning with a carload of Hams from a recent country "convention," VK3CH saw a snake, and, hero-like, did some killing with a big stick. Alf. Harris tells us that one of the party (viz., VK3KR), on feeling a bump, wanted the driver to stop. He said that he wanted to get out to dispose of a herd of pink elephants.

A case of the pot calling the kettle black.

Putting the Tape on Ultra-High Frequencies

By VK2PT.

A unique characteristic of these short waves is the possibility of actually putting the tape on them, much in the same way one would measure a piece of material. There are various ways of accomplishing this. We will require two lengths of bare copper wire, 26gu, or nearest, and about 20 feet long. These are hooked up to the aerial coupling coil on the transmitter and run parallel across the room, to be insulated and securely tied at the extreme ends. It is necessary that the wires be kept as tight as possible in order to facilitate the experiment. A pea-lamp is connected per medium of a socket between two short, straight pieces of heavy copper wire, and bridged across the parallel wires close up to the transmitters. Move the lamp backwards and forwards near this point until maximum brilliancy is obtained. When this is found another piece of copper wire is bridged across the parallel wires close up to the pea-lamp on the opposite side to the transmitter; the lamp will immediately go out. Move the jumper slowly away from the lamp indicator (leaving the lamp in the same position right through the experiment) until a position is found where the pea-lamp again lights at its brightest. This point should then be marked by tying a piece of cotton around the wire or by means of a clip. The jumper is then moved away from this position farther along the wires until the lamp again reaches maximum brilliancy. The distance between these two points represents one half wave length. We now measure this distance with a rule and apply the following formula:—

$$X = \frac{D \; 2}{39.37079}$$

Where X = in metres
D = distance (in inches) between jumpers.

To simplify this equation, 39½ may be used for one metre in ordinary work.

The theoretical explanation of this phenomenon is simply that the lamp is lighted at the current antinodes or point of maximum current along the wires; when the jumper is applied near the antinode it forms a short circuit and the lamp goes out. As the jumper is moved away from the antinode it reaches a current node or point of minimum current at which the lamp lights up again, there being no current here to short circuit. The distance between these antinodes will always be equal if we are to have a true sinusoidal wave form.

To complete the experiment a wavemeter should be constructed and calibrated. This may consist of an ordinary broadcast condenser with plates removed to give two stator and one rotor, coupled to a single turn coil 3 in. diam, 11 or 12 gu, and another coil 2 in. diam with a pea-lamp connected in series and placed inside the larger coil and held in position by a piece of string tied to the indicator coil, then threaded through a bead and tied to the outer coil. This makes for sharper tuning in the wavemeter. A calibrated graph can now be made and dial readings taken.

I would like to add that I have tested this method of wave-length measurement thoroughly, and have found it to be one of the most interesting experiments. I can vouch for its simplicity and accuracy.

In conclusion, it would be well to mention that only a very small wavelength range is covered by the average condenser, and the coil combination used in this class of ultra-high frequency, so don't be surprised to find that your tuning range is only a few thousand kilo-cycles.

Simplicity does not pay always; but read this true story. VK3PS had a service call from a neighbour. Appears that the receiver consisted of an ancient double grid tube with aerial connected direct to control grid. Phones from plate to positive A; space-charge grid also direct to positive A. The owner could receive only one B.C. station about four miles away. In his ardent efforts to locate trouble he had removed all the "gadgets," a real case of "forced induction," or, better still, "supercharging."—VK3PS.

Getting T9 from the TPTG

By VK3HG.

Although the Goyder Lock principle has never found great popularity here in Australia, it has been widely used in England for some considerable time, and as the circuit appeared both simple and effective the writer decided to give it a trial. The results obtained have more than justified the effort, as the note obtained is always reported as "Ringing Crystal Control."

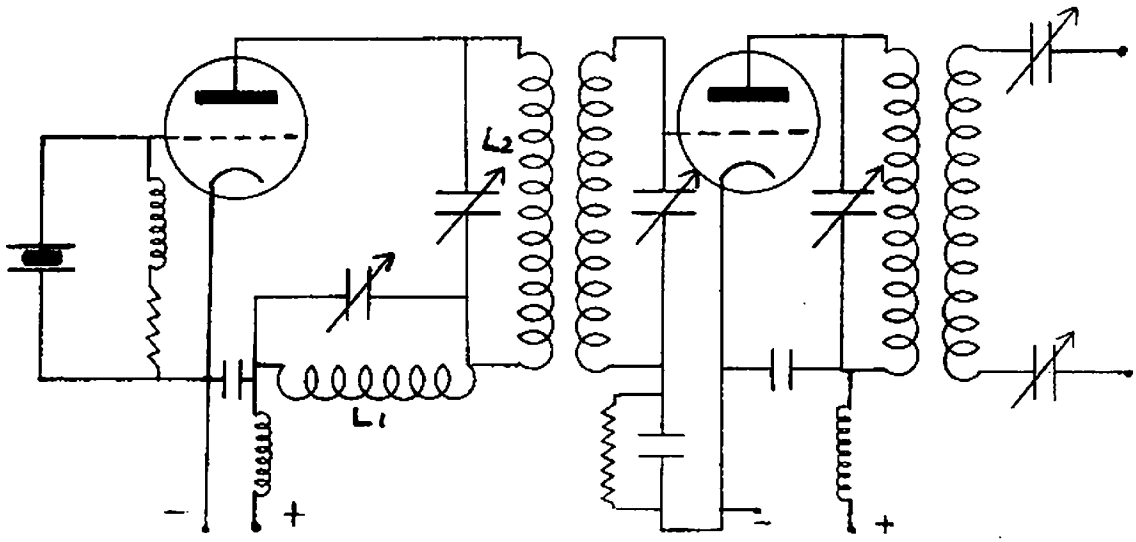
The circuit, as used at VK3HG, consists of a straight TPTG with a self-doubling CO coupled to the grid coil. This type of crystal oscillator was used because not only is the minimum amount of gear used, but also the total current drain is less, a factor that is of considerable importance in the country. Any other arrangement could be used in the oscillator, quite as effectively, such as a straight CO and FD, or an oscillator similar to 3ML's described in December "Amateur Radio."

Before building a transmitter such as this it is essential to note that the use of a monitor is imperative, as it is quite impossible to tune the two circuits correctly otherwise.

It will be easiest to start up on 3.5 MC, as it will be found easier to lock the two circuits with the greater CO output obtainable on this band. Tune the CO tank L2 until the crystal oscillates (L1 is shorted out on 3.5 MC), and place the tank coil about three inches away from the grid coil of the TPTG circuit. Pick up the note in the monitor, then switch off the CO, and tune the TPTG until its note is at zero beat with the monitor. Of course the aerial must first have been coupled and tuned in the ordinary way. Switch on the CO again and the TPTG should now be locked to it, producing a CC note. Slight readjustment to the latter circuit may be found necessary, but be sure that the coupling of the CO tank and TPTG grid coils is as loose as possible.

To tune to 7 MC or 14 MC, coil L1 is tuned until the CO oscillates, then L2 is tuned to the band desired. The CO plate voltage may have to be increased to get sufficient drive on 14 MC, but care must be taken not to overload the tube in the oscillating amplifier, as its frequency will then be liable to creep and the circuits will unlock.

For those who work exclusively on 7 MC and 14 MC a 7 MC crystal is to be recommended because of the increased output obtainable on 14 MC. The CO tube can be of any type, but an ordinary receiving tube will be found satisfactory for all medium power purposes. This circuit is not intended to replace the conventional multi-stage rig, but is intended for the man who cannot afford the components required for a three or four-stage transmitter. Practically the only cost is the crystal itself, as enough gear can usually be found in the junk box to build up the crystal oscillator.



First Country Conference

3WE.

When advised that the State president intended to visit Birchip the local "howlers" (3CH, 3LH and 3WE) considered it an f.b. idea to put into practice an idea formulated by 3WE some time ago—that rural conferences should be held under the auspices of the W.I.A.—and invited all active bands within 100 miles to foregather with them and meet our genial friend, George (having first of all solidly screwed down the junk heaps they miscall transmitters, and appointed an official searcher).

George (3TH) and Otto Holst (3BY) duly arrived on the afternoon of January 5, and we hope they had a reasonably decent time (however, they can speak for themselves). After inspecting the local transmitters (?), including the 2RM factory (miscalled Electric Supply by 3CH) the gang of five piled into 3TH's "Lizzie" (?) and went out into the Mallee, descending upon 3CE at Berriwilloch, finding that Mallee cocky busy on a harvester. Roy's "mitter" and farm plant were duly given the once over (N.B.—3TH is seriously considering going on the land—ses U). The gang were most hospitably entertained by Mrs. 3CE; so much so that they did not return to Birchip till fairly late, and after vainly endeavouring to raise the Melbourne gang on 200 MX through the 2RN and local 2RM called it a day at 3.30 a.m. Sunday.

Sunday was the main day, and just before noon hams arrived from all directions. Those who foregathered in Herb's (3LH) shack were Geo. Thompson (3TH), State president, and Otto Holst (3BY), State council (Melbourne); Paul Watson (3PY) and 2nd OP. (Warracknabeal); Murray Orr (3OR) (Lake Meran), Roy McNally (3CE), and OW (Berriwilloch); Ken Rankin (3KR) and YL (Kerang); Arthur James (3JV) (Macorma); Alf Harris, Herb James, and A. R. ("Smiler") Williams (3CH, 3LH, and 3WE), and 3CH 2nd OP (Birchip).

Proceedings were most informal. Nevertheless, when the visitors (and locals) had washed the dust from their tonsils, 3TH and 3BY were kept pretty busy answering the many inquiries shot at them. The State president strongly impressed upon the gang the necessity of them using their best endeavours to get all active hams to join up with the W.I.A. so that the institute might speak with one voice on behalf of, and advance the aims and welfare of all VK3 hams.

Many items of interest were discussed, chief of which was phone on 200 metres, on some of the aspects of which many present were somewhat hazy as to their rights. Geo. and Otto duly cleared up several queries, and all local "howlers" now know where they are.

Another matter ventilated and one worthy of consideration at the Federal convention was that of Phone and SW on 3500 and 7000 bands. 3WE pointed out that there was a more or less tacit agreement not to use phone on 40 at night, and thought, this being so, it would be only fair to keep 80 clear for phone at night, at any rate during the winter. 3KR pointed out that very often phone had to be used on 40 to W.A.C. on Fone. The president agreed and stated the main objection to 40 phone users was the grinding out of records thereon. 3PY offered a solution—that the 3500 KC band be divided, half for phone and half for CW. This was agreed by all to be a good idea (but very hard to achieve, 3TH).

The Birchip gang provided a VY FB spread at the Alcove Cafe, after which the Melbourne visitors, after expressing their pleasure and thanks to the Birchip hams for their hospitality, set out on their 214-mile trip back to the city. The other visitors then made the rounds of the local stations, and when evening was approaching set out on their respective journeys. Before leaving, 3KR and 3OR conveyed the best thanks of the northern boys to Alf, Herb and "Smiler" for the FB time, and dropped a hint that another country "get-together" would be held at Kerang at Easter.

The move initiated by Birchip to initiate rural conferences is one that, if continued, should do incalculable good for the institute and hams generally. A majority of country amateurs have little chance of attending city

conferences or getting round to compare notes (or gear) like the townies. As our president will agree after his trip to the Mallee, they're not a bad lot of chaps really (bar looks), and all dead keen, despite the difficulties they work under.—VK3WE.

President's Addendum.

Otto and I certainly agree with the above remarks, and wish to add that we had a splendiferous time, and it was well forth the trip up. Our special thanks are due to Mrs. C.H. for her wonderful hospitality, and to all the boys who so honoured us by coming long trips on Sunday to meet the representatives of the Victorian division of the W.I.A. The unbounded loyalty and real ham spirit of the northern hams is absolutely beyond question, and the fact that BY and myself were able to clarify many hazy ideas gave us an added pleasure. The only thing we missed was sleep, and unfortunately there didn't seem to be any time for that commodity. Many thanks to you all, and may we meet again soon and often.—Otto and George.

NOTES ON 14 MC IN SYDNEY

The usual cry that conditions are becoming worse has some support when a comparison of station logs, for November, December, 1932 and 1933, is made. Early in December last year we were able easily to contact many Europeans, with Africans and South Americans as well, but now, although HC2JM and Y16RK are fairly consistent, their strengths are comparatively weak and very few Europeans are heard at all.

The best local results have been obtained by VK2AH with his new QRO rig. He works the above stations easily, and has also landed several others like ZS1H. One bright spot appears with the advent of these South Africans, several of whom have been worked, though only one or two were faintly heard last year.

From 2XQ and 2EG, of Quirindi, comes news of good results on 14 MC, but conditions are often much better to the west of the mountains. During the quiet periods the air is enlivened by music of excellent quality from 2XU, who has recently received a card from HP1A confirming a QSO in which 2XU was given R7 for his 10-watt fone. VK2XY and 2BX divide their time between 14 and 28 MC, and 2BA may be heard slapping the bug as of yore. 2NR is trying to silence power leaks and to discover the relative merits of Zepp and Hertz aerials. VK2ER is on with 7 MC Xtals, and 2JC is a newcomer to the band. VK2LZ, one of last year's most consistent performers, is now rarely heard. Rumour has it that Con is changing his notorious M.O.—Tripler (Modulated)—Doubler—P.A.—to a simple straight eight Xtal outfit. We are now looking forward eagerly to the event of the year—the B.E.R.U. contest, when we hope Australia will be well in the front.

28 MC IN NEW SOUTH WALES

All known activity on ten metres (28 MC) seems to be confined to four stations at present, 2BX, 2NR, 2XY and 2YC. To 2BX goes the first Interstate QSO for this season. He worked 3CW between 7.30 and 8 p.m. on December 3. 2XY had the second QSO with 4BB on the 10th, between 9 and 10 a.m., and 2YC has been heard in VK4, but doesn't seem able to hear any replies. 2NR seems to be the unlucky one, for to date he hasn't had a QSO on ten MX, though he has been heard by 4BB and 2XY, but like 2YC he may acquire a "receiver" in time. Hi!

2BX and 2YC are determined to give "somebody somewhere" a chance to hear their nice 10-metre rigs, for they have had a QSO each morning between 7 and 8 a.m. for over a month. When 2XY gets up early and joins in, 2YC becomes over-overawed by the "commercial op" and QRT's.

The gear used varies from 2BX's TBO4/10 in TPTG, 2NR's PP TNT 46's, 2XY's 210 ultrandion, to 2YC's 245 TNT—the input—well!

The band shows promise this year, and it is to be hoped many newcomers will make their first appearance there before April, 1934.

STATION DESCRIPTION

VK2ER, Carlingford, N.S.W.

VK2ER is located on the hills at the west of Epping, not far from VIS. The accompanying photograph gives a general view of the station equipment. The transmitter can be seen in the right background. The large frame contains the transmitter complete with all associate power supplies, etc. On the lowest shelf next to the floor are the filament and plate supply transformers, and a regulating transformer to give a buck or boost of 40 volts in steps of 10 volts to the house supply, which in this locality is not exactly all that might be desired.

Immediately in line with the cushions on the chair (and the op likes comfort) can be seen the radial switch for selecting the correct boost or buck voltage. A reversible plug immediately below the radial switch alters the polarity of the primary of the booster to give buck or boost as desired.

On the second shelf (and behind the power panel still) are located all the low frequency rectifiers, filters, keying relay, thump filter, bleeder resistors and voltmeter series resistors.

The next shelf with the bakelite panel, and in line with the key, carries the speech amplifier, modulator, RF bias rectifier, grid leaks, etc. A number of jacks and a travelling plug allow many measurements to be made on one meter.

The next shelf (the lower one with three meters) carries the CO and FD. The upper shelf with three meters houses the PA, and the top panel provides for aerial tuning. The actual circuit employs three stages, using a TCO3/5 247 as CO with either 160, 80, 60, 40 or 20-metre crystals; a UV202 or 246 as FD and an RV218 as PA.

Telefunken modulation is used with good success, the modulator tube being an RV222, which is made for the purpose of applying this type of modulation to the RV218. The bias for the RV222 is derived by rectifying RF from the doubler tank. No batteries other than the microphone battery are used in the transmitter, all other bias being derived from grid leak resistors. In the CO and FD stages two watt carbon leaks without RF chokes are connected direct from grid to centre tap. It was found that RF chokes were unnecessary in these stages, and were only a source of trouble.

The microphone is an Ericsson type N7701, and actuates a 227 as speech amplifier. The present aerial is a 40-metre single wire matched impedance. It may be of interest to mention some tests made with aerials at this station. A suitable wire was fixed along one fence of the yard, and all the popular types of aerials made up and carefully adjusted, and the pressure induced in the test wire observed with a given transmitter input. Each aerial replaced the last in the same position relative to the test wire. It was found that the single wire matched impedance aerial gave the greatest induced pressure. Close to it came the doublet.

The standard zepp aerial gave the poorest results of all. When the particular directive effort of the doublet used as a twin zep was noticed the tests were repeated with a test wire at right angles. The results, however, were the same. These results cannot by any means be considered as conclusive and final, but they certainly exhibit the need for investigation into aerial design, etc., to obtain the maximum radiation from that 25 (?) watts input.

Referring again to the photograph, the frequency meter is seen on the left-hand end of the operating table. Next to it in the large aluminium cabinet is the 1—V—2 receiver using DC throughout. The smaller aluminium cabinet contains the monitor, and at the extreme right is a cabinet containing QSL cards, crystals, log book and miscellaneous stationery, etc.

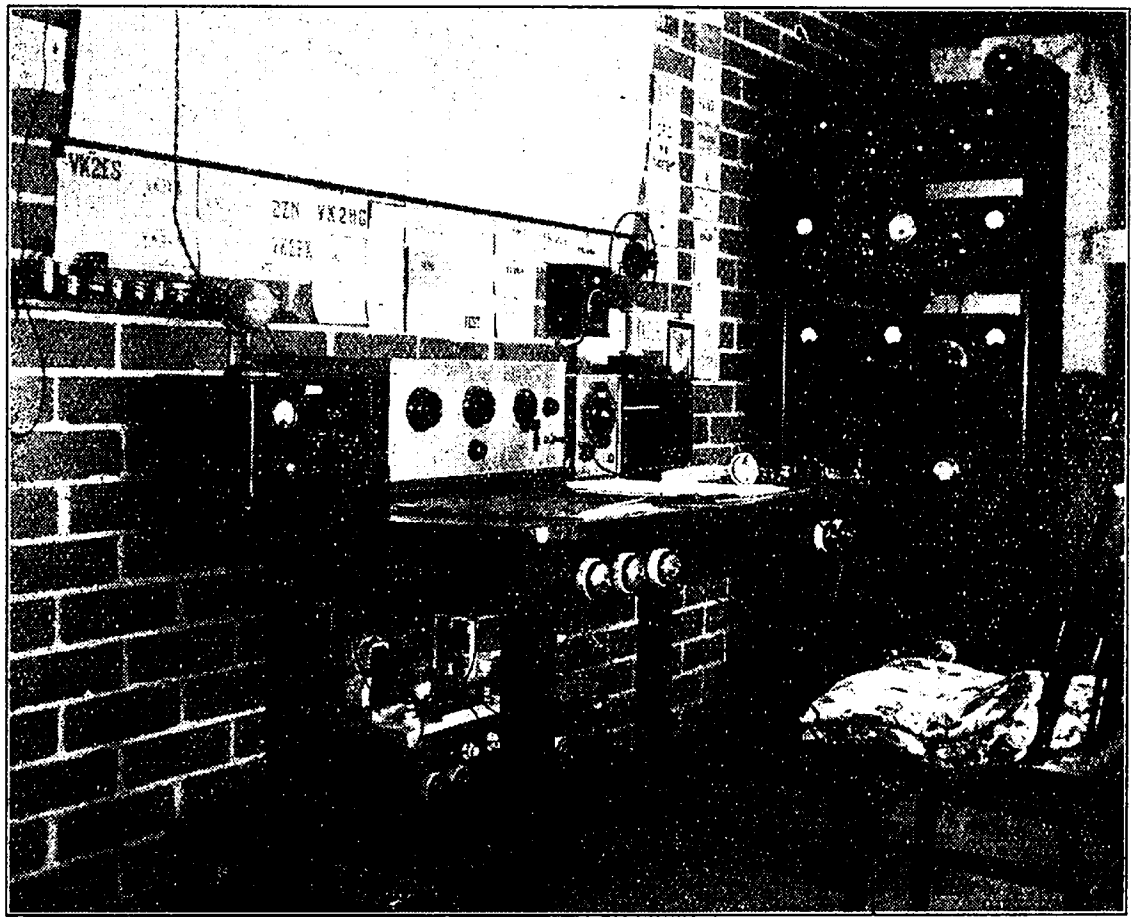
Immediately above the QSL cabinet is the crystal-controlled frequency standard carried on a spring bracket secured to the brick wall. This standard acts as the "silent watchdog" on the frequency meter. It is operated wholly from storage batteries, and is calibrated against variations due to temperature, which in the case of this particular crystal are practically negligible. An absorption meter (standing on top of the transmitter) is particularly useful for rough work when investigating CO and FD peculiarities.

Beneath the table can be seen the storage batteries and chargers. The large, black box contains a 150-volt battery, and the charger on top of it

is actually a heavy duty eliminator made for the purpose of running the receiver direct from AC mains by putting the valve filaments in series and taking the B voltages from a series resistor, the whole to be neon stabilised. When the experiment proved a "flop" the eliminator was relegated to the job of keeping the storage B battery up to the mark. The A battery and charger are beside it on the left.

Along the table front are all control switches and resistance control of regeneration handy to the operator. Two receiving aerials are in use, one a high single "skywire" and the other a 20-metre doublet, which cuts out QRM from VIS on the 40-metre band.

The only thing keenly desired now beside 204A's, etc., is some gadget with the "nice shiny brass handwheel" to cut out harmonics of local broadcast stations from the 80-metre band. Any suggestions, please?



AVAILABLE FREE TO W.I.A. (Vic.) MEMBERS.

Below is a list of some of the books in the library at the clubrooms, Kelvin Hall, Collins place. These are available rent free to members. Space does not permit us to list the comprehensive range of meters and testing gear also available. We hope to publish the meter library next month.

Inventory of Books in Library.

"Trouble Shooter's Manual" (Ryder).
"Radio Principles" (Henning).
"Radio Telegraphy and Telephony" (Duncan and Drew).
"Radio Amateur's Hand Book," 10th Edition.
"Principles of Radio" (Henney).
"Radio Telephony for Amateurs" (Ballentine).
"Wireless Direction Finding" (Keen).
"Photo-Electric Cells" (Campbell and Ritchie).
"Mathematics of Radio" (Ryder).
"Short Wave Communication" (Lander and Stoner).
"Radio" (Bureau of Standards).
"Oscillation Valve" (Bangey).
"Radio Receiving Tubes" (Moyer and Worsperel).
"Wireless Telegraphist's Pocket Book" (J. A. Fleming).
"Wireless Valve Transmitters" (James).
"Experimental Radio" (Ramsay).
"Fundamentals of Radio" (Ramsay).

MEANDERINGS OF MARJORIE

By VK3HQ.*

Tingaling, tingaling. . . . Now, who could be ringing up at this unearthly hour? Oh! the alarm. Whyever did I make up my mind to get up to-night for DX when I could have made it to-morrow night?

Creak, creak. . . . Botheration, I'll wake the whole household. Must be particularly cautious not to wake VK3HM, as this is to be a solo night, a night of new countries, and one I shall be able to put over VK3HM and VK3HL for months.

O-o-oh, my toe! Wait till I see the 3HL Junior op in the morning for leaving her doll's pram there.

0200. Mmm CQ DX DE V8AF, with still the same old chirpy note. Worked him last year, so I'll just see what else is on the band before I call him. Really, those commercials should be kicked right out of the band! Whose band is it, anyway?

V8AF gone, of course, and it's too late to call him now, but I suppose something else will turn up soon. . . . One should always remember that a bird in the hand . . . Hullo! VQ4CRL calling CQ DX. Here's my first new country. ND, that's funny; he must have a dud receiver. I'll try again anyway. Left me cold, has he? Well, that's just too bad. I'll call CQ DX and give him a chance to redeem himself.

I suppose it's just as well there is a commercial or two to vary the monotony and to keep one awake.

Now, twenty metres is supposed to be the goods at this hour, so we'll try and prove the truth or otherwise of that statement. As the city dweller said when he looked out of a window in the country : "Just nothing, nothing and nothing!"

Well, here's a short-wave B/C station on 25 metres, probably GSD. Very nice, too; but, fond as I am of music, new countries is the object of this nocturnal visit to the shack.

Back to forty. . . . Hurrah! here's something. . . . Oh! forty, why did I ever leave you? Only a KAI handling traffic. . . . Not interested, thanks! Just after a five-point relay contest, I ask you!

Well, there's nothing else for it but to fill in time some way, because something is sure to turn up soon. A close, hot night like this should be good for DX.

ZL1FG and ZL3BJ trying their luck. And does the latter ever leave the key alone, I wonder? They didn't last long. And if a ZL can't raise DX, who can?

I suppose it would be a good chance to write out a few QSL's I owe. No; too much like hard work, so I'll scribble a few lines about nothing at all. Thus this article is born, my first —and probably last—attempt.

I wonder how many hams have been through this before? Guess we all do some time or other in our misguided existence.

0415. A CQ at last from our old friend, J1EE. Very pleased to see him. But what does he mean by appearing at the hour that Europeans are supposed to make their debut. If he doesn't answer me I'll give up radio and start chicken-raising.

Good man! But what have I done to deserve being called "OW"? However, you are forgiven for giving me such a good report. "R8," not bad for 25 watts, hi. "Sorry, OM, but I can only give you R4, as condx hr absolutely punk."

0445. "Mni tnx fb chat es hpe cu often. Gb."

0450. PA0AZ. Of course, it would be a PK calling him, and not the genuine article.

Things are brightening, as there are a few sigs round the band at last.

BLUR-R-R-R-R! Oh, you would! VK3HL's dynamotor starts up, and I remember Allan put in a prior claim for 5 a.m. and onwards.

That's that! But what shall I say to-morrow when the usual question is asked. "How many countries did you work last night?". Methinks I'll stay in bed all day.

Sequel : 5 a.m. to 7 a.m.—3HL lands PA, UO, a couple of G's, F, OK. It's a hard, cruel world!

[VK3HM, HQ, and HL are mother, daughter and son respectively.—Ed. "A.R."]

*Marjorie Hutchings, Callawadda, Vic.

VK3 SECTION NOTES

Key Section

(Conducted by J. H. Winton, VK3XR.)

At the last meeting of the 4th Div. Sigs. three ham members of the wireless section discussed the possibility of taking portable equipment away to the A.U.A. week-end bivouac. The hams were VK's 3KC, who has portable licence, XVK3KC, and VK's 3FX and 3HO. On Friday before the week-end 3FX built a receiver and transmitter, RX, measuring 2 in. by 4 in. by 8 in., TX measuring 6 in. by 6 in. by 6 in., and using 171A valve. On arrival at Broadmeadows camp the above-mentioned hams and two other members of the section collared a room and proceeded to get into action. A 66 ft. straight wire was strung up for aerial, and was about 14 ft. high at free end and 7 ft. high at busy end. Hi! The power supplies were two six-volt accumulators, separate ones for RX and TX, because they happened to be available, and two light duty B batteries, 100 volts on the transmitter. The input was about ¼ watt. The TX was a Hartley circuit, and RX was Schnell. The first contact was VK2BK, who gave us QSAS R5. After that we worked VK5NR QS-R6; VK2FM QS-R5; VK3WL QS-R6; VK3UJ QS-R3; VK2AT QS-R3; VK2NG QS-R6; VK3YR QS-R6; VK3XQ QS-R6; VK3HT.

VK3 Phone Notes

Again we come to the doings of the phone section, and again this section has not had a meeting since November. Consequently the meeting doings are conspicuous by their absence. As mentioned in the January issue of "Amateur Radio," it was decided to defer the phone meetings to the last Tuesday in the month. The November meeting was the last under the old scheme, and the December gathering, due to holidays, etc., was missed, and we come to our first meeting for 1934, on January 30, which will have taken place by the time this is in print. The report of this meeting will appear in March issue of "Amateur Radio."

As everyone has probably heard, the current AOPC class is going along in great style, and I learn that a new one will commence in six to eight weeks' time. Prospective students take note—The class number will be limited to thirty members, who will, of course, receive the same privileges as the present students, i.e., free student membership and free subscription to "Amateur Radio" for twelve months.

There are still some country phone members active on the band who have failed to apply to the P.M.G.'s Dept. for an extension of their permits. In fact, several chaps will not receive allocations as a result of their failure to do this. The applications for permit extension should be at the dept. about two weeks before expiry, and applications for wave-length allocations must be made to Mr. G. F. Thompson, 3TH—the earlier the better.

As for unfinancial members of the institute—"never put off till to-morrow what you can do to-day." Except where absolutely impossible we urge all members to make a super-human effort to bring their subscriptions right up to date.

During the Christmas holidays 3BY (Mr. Otto Holst) and 3TH (Mr. George Thompson), paid a visit to Birchip. As reported in January "Amateur Radio," 3TH commenced by going to Lakes Entrance, where he proposed to listen to the boys, but apparently they cut off the power at 10.30 p.m. However, he is going to Kerang at Easter time, and probably some observations will be made from that spot.

The Birchip hams, 3CH and 3LH, apparently treated the visitors in a right royal manner. They stayed on the air long into the "not so wee" small hours of the morning, apparently talking to each other across the road. That is a fact. I believe 3CH and 3LH are situated geographically so. 3DH listened for George at these stations on the appointed Saturday night, but due to very severe QRN 3CH and 3LH were not noticed at all. They must have been somewhere back of the terrific QRN.

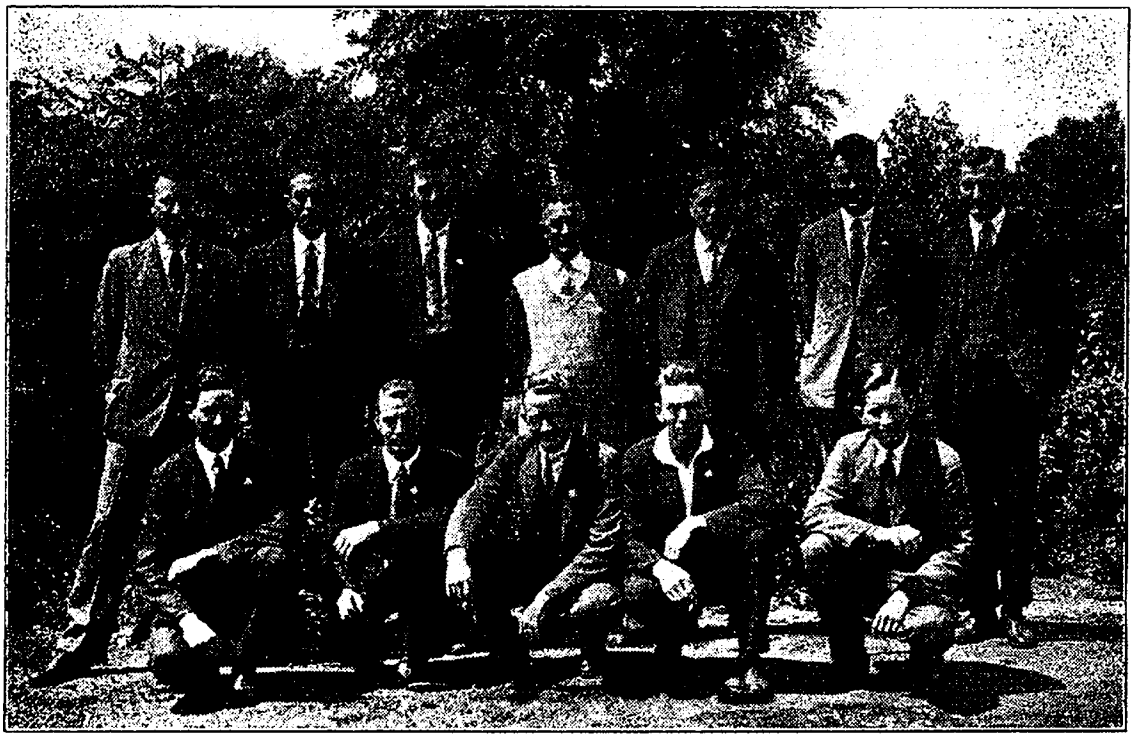
Another almost-all-night broadcast

was conducted by the stations 3HF, 3RI, 3JT, 3KE, 3XL and 3FY on the night of January 20, or rather between 20th and 21st. I learn from Mr. Manning, of the allocations committee (I wasn't the mug who listened or took part this time) that 3HF commenced somewhere between 11.30 and 12 p.m., and so did some of the others. At approximately 1 a.m. I understand 3RI was hooked, and 3JT and 3KE were heard through 3RI. 3FY also started up at about 1 a.m. The most interesting event of the night or "day" was the way in which 3KE worked duplex with others. In the absence of a suitably selective receiver 3KE heard the rest on 80 MX per medium of 3XL, who had a super with which he picked up whatsoever was required and relayed them to 3KE on 80 MX.

I believe there was a mouth-organist at 3FY who rendered some very FB efforts, but the studio manager was most unsuccessful in stopping him, so they played a record or so occasionally, the artist being blissfully ignorant of the fact that he was not on the air.

By the time these notes appear Bill R. Gronow, 3WG, will have joined the ranks of the married hams. I understand that this is his first attempt at anything on these lines. I am sure I can speak for the phone gang in wishing Bill and his OW every happiness in the future.

Ivor Morgan, 3DH.



Back Row.—3KR, 2nd OP. 3CH, 3WE, 3TH, 3BY, 3PY, 3CH.
Front Row.—3JV, 3LH, 3OR, 3CE, 2nd OP. 3PY.

COUNTRY NOTES

From the Mallee.

Well, the big event, the W.I.A. first country conference at Birchip, has come and gone, and so have George and Otto, and all the rest of the gang. Sure was a great "do," and the Birchipites entertained in slap-up style. Just showing how small the world is, our president and "Bill," of 3WE, lived next door to one another in Lilydale way back in 1913. Geo. didn't even blush when "Bill" related how he used to sneak a car out at nites to go riding with the GL who is now his OW. Proceedings of the Birchip "do" should be reported elsewhere, so we won't belabour the subject, but anyone listening in on 200 M on the nite of 6th must have thought the Birchip gang had blown the froth off several. Especially so when Alf (3CH) complained that his 50 watter was getting hot, and 3TH told him a novel way to cool it. Rumours of another ham who travels

long distance to see a GL—Murraydale to Warracknabeal—not bad for 3CD. We're thinking of getting 3PY to put her on the air occasionally (if his YF permits) to save CD the long trip. A newcomer to the northern crew is 3ZK Swan Hill, Jim Stevens, working on 80, vy 2RP at present but hopes to do better. Got about five assistant ops and none of 'em nickel shy. Guess it costs ZK something to keep their tonsils "oiled" this weather.

Also heard on 80 phone 3AN, Redcliffs, duly answered his CQ, but don't think he can have an RX. What's wrong, Arch. We reckoned 80 MX was dead till next winter, but a few of the diehards still stick to it, and vow that next week will find them on 20 MX. However, 20 MX doesn't seem much gd. Paul (3PY) complains that he gets .3 up the stick, but "divil" an answer to his CQ. 3LH and 3WE also tried 20, but cd only hear one another. As beforementioned, 80 MX, despite heavy 2RN, appears the best bet at present. 3OR, 3KR, 3PY, 3LH, 3WE and 3YJ were in a six way QSO one night, and all getting out well, and on Sunday afternoon, 14th, 3CE, 3LH and 3WE worked 4 way with 3OR, at which time Murray had 3KR, 3CD and 3KI visiting him. By the way, discovered during this QSO that Murray is a good "fish liar"—some of the cod he described were "e-normous." Murray (3OR) heard pounding brass vy fb—mostly shifting up his new public address amplifier built, I think, a la Bruce Mann. 3NN heard QSO 3CE the other nite. I tried to horn in but the two cockies talked wheat, wool and tractors so hard they never heard me. Give the Birchip gang a call, Herb, haven't QSO'd U 4 years. Another one missing, 3GW, but going to QRT and sell out. Hope not. 3TA another silent one, but had been ill lately. Hope CR soon in the pink agn OM. 3JK has turned up again, swings a mean fist on QRP 80 M, but sure sets out fb Arthur. Posted missing 3RY and 3KL, former been 2RL, he reports waiting for a maritime call, latter may be still in trouble with the QRM from the violet ray outfit next door. 3ZL on nearly every nite, usually working 3 way with Birchip gang and 2HU. Eric (3ZL) got vy fb condenser mike working now, a little heavy on bass, but that's all to the good. 3KE duly complete with twin GL sisters, and other spare YL's contacted tother nite (no wonder he has several 2nd ops, we're coming down to try our luck—if the YF lets us). S'pose 2nd ops are to convey all the 88's to the GL that Ern gets over the air. Hi! hi!

3CH still has his characteristic "blowfly," but he gets plenty of reports on 200 MX. Has changed from Hertz to Marconi with 5 wire fan c/poise. 3LH very worried with QRM from many sources—mostly 3CH's power station—but manages to get in a gd few QSO's. 3WE also worried by QRM, but very consistent on 80 at nites—till YF makes him quit. 3LH complains that 3OW section commander RAAFWR can't be hid in Birchip, wants to know if he's gone QRP. When last heard of 3CD was building 3-stage QRO rig, but we haven't heard it yet.

Pirates—Hrd a bloke calling CQ on 80 and signing VK3LO—three of us present so no mistake about it—has our national station gone over to CW.

3LH has been accused by Bob, of 2HU, during absences from the air, of being QRL YL's. He regretfully denies this and advises all enquirers regarding YL to apply to 3KR and his "crystal."

3KU ripping out well on 200 MX with Telefunken mod. Did u make a mistake, Ron, when u told 3LH u had 20 watts "in the aerial"? It sounded like it, anyhow.

General Phone Notes.

One of our country observers reports that a certain country 200 MX xmitter is consistently late in closing down—running sometimes 15 minutes over at each session, also that he acknowledges reports by naming person sending reports, and sometimes plays a string of half a dozen or more records without announcing his call sign.

HARMONICS.

Has anyone noticed the colour design of the cover of a certain well-known weekly radio paper.

It happens that it has been changed to the same colour combination as "A.R."

They must be feeling our "competition"!

INVENTORY OF TECHNICAL APPARATUS.

Below are some of the instruments available free on loan to members of the W.I.A. (Victorian division):—

DC Voltmeters.

Ferranti 0—7.
Weston 0—10.
Weston 0—10.
Ferranti 0—250.
Ferranti 0—250.
Weston 0—1500.
Ferranti 0—1000.

DC Milliameters.

Weston 0—10.
Ferranti 0—15.
Ferranti 0—150.
Weston 0—300.
Heyt 0—25.

DC Ammeters.

Weston 0—3.
Roller-Smith 0—5.

AC Voltmeters.

Weston 0—15.
Weston 0—15, 0—150.
Weston 0—300, 0—600.

AC Ammeters.

Weston 0—3.
Weston 0—5.

Thermo Couple Ammeters.

Weston 0—1.
Weston 0—1.
Weston 0—1.5.
Weston 0—3.
Weston 0—5.

Galvonometers.

Thermo Weston 0—100.
Thermo Weston 0—30.

Thermo Milliameters.

Weston 0—500.
Weston 0—250.
Weston 0—125.
Weston 0—4500.
Wheatsone Bridge.
Capacity Bridge General Radio.
General Radio Precision Condenser 1500 MMFD Variable.
General Beat Note Oscillator.
AF1 Standard Freq Crystal Oscillator.
2—AF3 Substandard Freq Meters.
1 TRL Tele-Picture Recorder, unassembled.
1 Set HMV Standard Freq Records.
1 Audibility General Radio 554.
1 Ferranti Multi Range Test Set.
1 Ferranti Valve Tester.
1 General Radio Output Meter 92.
1 Beat Frequency Oscillator GR.
Wavemeters, 5 metres, 2 only.
18 Meter Cases.
1 Reiss Microphone.
3 only 50 MMF GR Variable Condensers.
3 only 100 MMF GR Variable Condensers.
2 only 0—50 DC Voltmeters.
1 only 0—150 DC Voltmeters.
1 only Tifney 0—5 Volts DC Meter.
1 only Resistance Box Inst Nr 443.
6 only GR Dials.
6 only GR Dials, small.
12 only GR Panel Switches, large.
8 only GR Panel Switches, small.
3 only GR Panel Switches, V. large.

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

In all probability by the time that this issue of "Amateur Radio" appears in print the Federal Convention of the W.I.A. will have been held. The executive of the A.R.A., however, wish the Convention every possible success, and only regret that it has been found impracticable to send a delegate from the A.R.A. The whole of the A.R.A., however, will be present in spirit, if not in person, and will follow any reports received with interest.

It is particularly desired that members of the A.R.A. should send in technical articles for publication in "Amateur Radio," as we in N.S.W. wish to take an equally important part with other States in maintaining and improving the standard of the Journal, and this can only be made possible by the assistance of all. The secretary will be only too pleased to receive technical articles, and also more and MORE, and MORE subscriptions. SNAP INTO IT, A.R.A. (N.S.W.), and do not be left behind by the other States in the matter of enthusiasm for your own Journal.

FRANCIS M. GOYEN,
President.
ROBT. H. W. POWER,
Secretary.

ZONE 3.

During the month of December conditions on the North Coast have not been of the best for QSO, and with the Gang QRL the boys have not been very active on the air. VK2ZM has had the bad luck to blow out his 10's, and is using 45's until the winter, when he will come on the air with something out of the "BAG" as regards quality phone. Jim is also building a calibrated RX with output meter, and will be able to give the gang reliable reports and depth of modulation, etc. VK2NY is about the most active ham up North just now, and works on 40 and 80 metres. He is using PP TNT with 245's. 2GM will also have an FB phone rig going for the coming winter, and will not be on the air very much until his new rig is completed. 2AO has bought a business in South Grafton, and says he will be on the air again in the near future. 2OU, the North Coast DX king, has had some very FB QSO's, and had a rag chew with one W6 for three hours QSA5 all the time. FB Sid. 2CU has QRT. 2GK has gone to Lismore, and may be heard there from his new QRA in coming winter months.

Before long there will be a number of ham stations in the Lismore district and far North Coast. 2GL is active on 80 metres and putting out good phone to ZL using 5 watts. The Richmond River is a good QRA for RX conditions, and the ZL's come in on the speaker using 2V bat RX. 2CB. a new ham at Murwillumbah, has an FB rig using 46 xtal OS, 46 Buf and 210 in PP for the PA. and on his first 40 metre CQ's landed five W stations in the hour. Tom also has a Public Address outfit which he will use to mod the rig with, using a moving coil mike, which he says is the goods. 2XO has just had a trip up to the Tweed, and visited all the gang, and had many QSO's with the gang from the various hams' stations. 2GH, Les, was found at Ballina in a pair of shorts only, busy cleaning QRP fish. His house is right on the water, and at high tide the water laps under the floor; although A.C. is laid on to the shack, no wireless junk could be found. 2XO arrived back with a carload of junk after his trip up north, and amongst the junk were three gross of Quartz lenses, so with plenty of xtlas to QSY with now XO will be found on xtal next winter.

J. RETALLICK (2XO).
A.R.A. Zone Officer.

ZONE 6.

Conditions out in this part of the State have been very unpleasant lately. QRN very severe on all bands, even 20 metres being affected. The gang on 80 metres managed to welcome Xmas and New Year with FB multi-way QSO, including a fair number of ZL stations. One of the storms which have been prevalent blew 2QA's mast down across the telephone wires and disrupted the P.M.G.'s service for a while. The mast was about 55 ft. high, constructed of water pipe. It is now a heap of twisted wreckage. 2WH, of Forbes, has procured an alternator, and his fone has improved in consequence. Heard him on sked with 2LM, who still splits the ether with his QRO.

Judging by the remarks one hears from the Sydney fone gang, they all seem to be going in for QRO, 845's and 211's, Push-Pull. Class B are frequently mentioned. Heard 2ZN on fone recently with a fair background of music from 2CH. We understand that Bill's antenna is hanging from 2CH's masts, so were wondering if the music was caused by stray coupling, or if there was a receiver working in the shack for the purpose of keeping a check on 2CH.

One of the most consistently heard VK3's is 3ZL, who never seems to be off either 40 or 80 metres. He seems to come in equally well on both bands. 3OR also FB on 80 fone. How did the week-end tour to Birchy turn out, Murray?

This is 1934, so I take the opportunity of wishing "our" little magazine all the prosperity it richly deserves. May the New Year see it attain undreamed of proportions.

73 till next time.

JACK (VK2QA).
A.R.A. Zone Officer.

ZONE 7.

With the holiday season in full swing, activities in this zone have been somewhat spasmodic during the month. However, conditions on all bands show an improvement over last month, especially with regard to QRN. On 80 metres there is a fair amount of activity for this time of the year,

and some good fone transmissions are to be heard. QRN is, however, troublesome at times. Some very good DX is to be heard on 40 metres in the evenings and early mornings, conditions on this band being exceptionally good at times. The early morning DX seems to fade out earlier this year than is usually the case, and it is necessary to rise very early to catch it.

20 metres appears to be very patchy, conditions changing rapidly. However, the DX gets through very well on occasions.

2TA has been almost lost to ham radio of late; been going to wild parties and keeping late hours. Allan has been chasing bugs on 20 metres; but so far they have remained very elusive. 2LB has migrated to the 250 metre band and going to bed at 1 a.m. Is losing weight rapidly on this account; but we have also heard romours about a YL. He is now using a couple of 250's in PA, with Telefunken modulation. 2WA has been fairly active on 80 metres with Telefunken fone on the new xtal rig, and having some success. Has also been chasing DX on 20 metres, and only wants South America and Africa for WAC. Jack certainly makes a bit of noise since installing his power-house. 2PN gets on the air occasionally when the YL isn't looking (or should it be YL's?). Ross is now using a couple of TCOX/10's in the PA, and raises a fair bit of DX on 20 metres. He is making preparations for the B.E.R.U. contest, and hopes to make a name for himself. Good luck, anyhow, Ross. 2EZ, the new secretary of the QRP Club in VK, seems to have his hands full. Has erected a 264 ft. Zepp, and getting swell reports wtih three watts to a '45. Got QSA3 R3 from W6CUH, so why go QRO. Jack is unfortunate enough to be temporarily out of a job owing to a busted boiler, but is spending his holidays with 2PN. 2FI has been back on QRP, because his engine went bung; but an Overland car engine is almost ready for the fray, and it is hoped to have things moting again soon. "Harrie," 2YI, has returned to Liverpool again, and is talking in terms of QRO. Harry has a bet with 2FI that he will work 30 countries first, and so far it's a dead heat. Hi! 2WH, of Forbes, seems to have scrapped his "B" batts, and is now using an alternator driven from 32 volt D.C. plant. Hugh puts out some good fone with a three-stage xtal rig on 80 metres. 2WB still plays the saxophone. When are you going to brush those cobwebs off, Bill?

Well, I think that's the issue for this month; but I'd like to hear from other hams in this zone.

Cheerio till next month.

ATHOL (VK2FI).
A.R.A. Zone Officer.

ZONE 8.

2VF has shifted to a new QRA, but still in Corowa. Expects to be on the air again shortly with PP TNT outfit. 2EG is at present in Albury, and will be down this way indefinitely, but thinks he may become a VK3. His "extracting" duties will possibly take him across the border, with QRA at Tallangatta, some thirty miles from here. Another visitor is VK3KY, who is spending his vacation at Albury.

Bad QRN conditions still prevail on 40 MX, and for the past week the almost complete absence of W sigs has been very noticeable. Strange to say, sigs from VK3 have been very strong at night here. For many years only an occasional sig was heard from VK3 after sunset, and then at no time stronger than R2.

During one clear morning recently, with no QRN (strange!), J, PA, HAF and G were raised with successive calls, QRK varying from R7 to R4.

An occasional weak sig heard on 20 metres, but unable to raise 'em.

Cheerio, gang, till next month.

73's.

—NOEL (VK2OJ).
A.R.A. Zone Officer.

NORTH SHORE ZONE.

The two most outstanding events during the month of December were the Xmas 7-way 80 MX fone rag chew and the New Year 12-way VK-ZL fone party. The seven stations taking part in the Xmas party were 2KZ, 2HU, 2BP, 2NL, 2QA, 2DR. 2HU's 2nd op pulled me into the fun at 10 p.m., and we continued until 1 o'c Xmas morning. No doubt, the rest of the chaps had been yarning since 8 p.m. It was an FB night. Unfortunately 2BP and I were unable to participate on the New Year 12-way owing to attending certain festivals at Katoomba. Hi! However, here's a graphic account of the doings by one of the faithful 12.

The raging QRN on 80 didn't dam-

pen the spirits of those ZL and VK phones who joined in the big 12-way QSO on New Year's Eve. Those who heard this QSO must have been impressed with the great friendship that exists between the Aust. and ZL hams. To sit for hours taking copy from across the Tasman with QRN trying hard to smash that great link was a feat worthy of the best. Contact was made with ZL2PD at 2110 hrs. VK time, when the final arrangements were made for this FB test. The ZL and VK stations were then called into line by their respective "key" stations, and at 2210 hrs. the first contact was made between ZL and VK. Ten stations standing by ready to do their best to cross the Tasman! And did they? Read on, OM's.

AL2PD gave the word for ZL stations to go ahead in turn. This they did, each passing over his greetings to brother hams in VK. ZL2PD then came on for an OK from VK. This was at once given, and then the VK stations went ahead in their turn. This was carried out very successfully. VK and ZL stations had two overs each, some going, because the whole QSO only took 1 hour 45 minutes. Great praise should go to the ZL's for receiving under such trying conditions. Our chaps were only using low power, the highest 20 watts and the lowest 7 watts. 2KZ for this QSO used 7 watts and loop mod, and was received QSA5, R5, in ZL. FB work, Mas OM. We wish to thank ZL2PD, who acted as key station for ZL, for the trouble to which he went to make this hook-up an outstanding success.

ZL Stations as Received in VK.
2PD QSA5, R6/7
2DV QSA4, R5
2JX QSA5, R5/6
1AZ QSA5 R5
2ML couldn't locate
1CN QSA5, R6.

VK Stations as Received in ZL.
2KZ QSA5, R5
2HU QSA, R5
2HL QSA4, R4
2UO QSA2/3, R3/4
2XH QSA2/3, R3/4.

Conditions on 20 MX have been VY, VY pnk, and several of the 20 MX die-hards have pushed up to 40.

40 MX has also been very poor. QRN has been rocking in, and DX has been only fair. 2AH reports that northern DX has been good (such as KA, J, SV, etc.), western DX poor, and local conditions fair to good. Alan has worked G, W, VS, KA, K6, VE, PK, OM during the month. He is using a Tri-tet xtal osc, and says it's FB. 2YA broke down completely when he saw 2AH's beautifully made rig. 2BA has his superhet RX going nicely. During November he worked ZC6CN, ZS1H (three times), CX1CG, HC1FG on 20 and VP4AA on 40 with his 4-stage xtal, using 210 final with 800 volts the plate thereon. Jack, of 2HG, is back again with good xtal sigs and a good grid mod 40 fone. We are very sorry to hear that Norm, of 2ND, is thinking of going to VK4 for good. Suppose his Comet Pro will be going with him too. Too bad. Ian, of 2XC, is back again, and has been working Yanks on 40. He is building a bug. 2UP removed the filter from his pack in order to keep sked with me, and raised a howl of anguish from the local boys. Hi! Frank, of 2ER, has been experimenting with transmitting aerials, and has found that the single wire matched impedance is the best. 2HY says conditions on 20 during December have been the worst he has experienced. However, Roy has bagged VU, G6, VS6, Y1 and SU1 during the month. 2HY is using a 4-stage xtal with 47 osc, 46 FD, and 210 PA. 2DU has been on occasionally, but has been up-country during the month. 2LZ has done a bit of 80 MX and a bit of 40 MX, but only reports SU1EC as his DX. Andy, of 2VR, is having trouble with his xmitter. 2VG has been QSO W's on 40, as usual, and putting out good 40 fone. 2UG very quiet. Also 2JV. A recent competition at a Sydney milk bar was won by 2YA. Rex managed to put down five glasses of malted milk. 2DR (runner-up) managed four glasses, and 2BK tossed in the button at three glasses. Roy, of 2HO, is active, with a plus hefty PDC xtal sig. 2NB is active too, and reports fair DX. 2AH recently visited the Newcastle boys, and says they are all getting ready for the BERU tests. Visited Jack, of 2BK, and had an FB chat. Jack is cruel to a poor 45; but hopes it will live for ever. He is using a 5-tube AC RX. I put up a vertical receiving doublet, and noticed a good lift in sig strength over the horizontal doublet. Also QRN has been reduced considerably. Owing to this, I can still work ZL fone on 80 MX with an AC2 tube RX in the middle of summer without any QRN interference.

Haven't heard from the Manly group this month. Once again I would ask hams in the North Shore Zone to please phone me at Wah. 284 or BW6311, and let me have your news.

Very sorry the notes are short this month; but 2DR is having a well-earned (?) holiday at the seaside WITHOUT a portable.

Well, so long, chaps.

VY 73.

DON 2DR.
A.R.A. Zone Officer.

VK4 (QUEENSLAND DIVISION)

The monthly meeting was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, January 12, before a good attendance of transmitting and student members.

The resignation of the assistant secretary, Mr. L. Williams, 4LS, owing to his departure from Brisbane, was accepted with regret.

Nominations were called for the vacant position, and finally Mr. C. Miller, 4US, was elected.

On Monday, January 29, several members of the portable section will be in attendance at Kingston to check the running of the 100-mile motor cycle race; fone is to be used, and transmission will take place on the 80 MX band.

A meeting of all transmitting members will be held on the second Thursday of each month, commencing on February 8, and good attendances are expected.

Kindly note that all correspondence for the institute should be addressed to the Secretary, Box 1524V, G.P.O., Brisbane.

Conditions on the 40 MX in VIB have not been of the best during the last few weeks owing to heavy QRN, which is usually the case here at this period of the year. However, a few of the boys report having worked a little DX during the early hours of the morning.

4GU worked his first DX station during the month, this being PK1WB. Dick has also landed a KA since then, and he states that both reports were satisfactory. He is looking forward to some more when condx improve. Both contacts were on 40 MX.

4JB spent his Xmas holidays at Burleigh, and while down there tried his luck at fishing. Ock tells sum gud ones about the big fellows that got away, etc., and all the usual fish yarns. Sa, think you should join the Fisherman's Union, ob. Anyway, what's been doing in the DX line?

4LM, of Toombul, is using a Hartley with an input of 15 watts to a 46, and has been heard with a gud DC note at times. 4JF and 4ZX have been working duplex fone, and seem to be doing OK. 4ZX is using a 210 in Hartley with a power input of 18 watts. 4HR is back again in VIB for a few weeks. Tibby has been in Nambour for some time, and reports some good contacts on 40 MX with his xtal rig. 4NG has been heard quite a lot of late with his portable outfit. Roy is still at Tambourine, and seems to be getting some fb reports. Must be the location, mine tinkit. 4RS, of Prosperine, is putting out a vy nice sig, and with 20 watts input to two 245's in PP TNT comes in very solid during the daytime. 4TY, of Gracemere, is down in VIB for the Xmas es New Year vacation. Norm. is awaiting news of his transfer to another school. Says he will be glad to say goodbye to Gracemere. Hi! 4GY has been playing around with short wave super hets. Says they're the goods if you get them working rite. Sa Frank, what about 56 MC whats doing over ur way? 4UK, now of 220 South street, Toowoomba, reports condx fb for DX on 40 MX at his new ora, the following countries being worked during December as under:—AC, CT, FB, J, KA, K6, PK, SP, U, UO, VE, VP, VS. W, YM. Vic has been getting reports of R6-9 from the Yanks. Well, the new xtal rig certainly seems to be perking fb ob. 4BB, of Maryborough, is using telefunken mod and is often heard at R8-MAX here quality very gud. 4GK, "Mac," of Wynnum, says condx NSG, in fact he does not even remember things so quiet on 20 MX. Has been listening on 10 MX, but so far nothing much to report. 4WT, 'ole Bill, paid a visit to Toowoomba during the New Year holidays. and was the guest of 4RY during his short stay up there. A visit was paid to 4GR, the local B classer, on the Sunday morning, but before landing there we were joined by 4HS, a local ham who invited us into one of the local taverns to blow the froth off a couple. Bill's eyes stood out like organ stops when he saw the crowd

having an open go. At 4GR we were met by 4CG, Cliff Gold, and 4EG, Ed. Gold, who escorted us through the station (notice Cliff kept his eyes on Bill the whole time, hi), and explained all the doings there. During the afternoon a visit to 4UK, a motor drive to Picnic Point, and a couple of Oso's on 4RY's portable rig completed a very enjoyable day. Monday morning was spent motoring and several beauty spots were visited. Bill returned to VIB during the afternoon, after having spent a short, but pleasant, holiday. 4TS not heard so much lately. Ted as secretary states QRL on institute matters. 4WD, Bill Hepton, in conjunction with 4RB, Bob Browne, are to be seen sending out the Dits es Dans every Tuesday nite at headquarters for the benefit of the student members. Bob says he would gladly welcome any member who wants to pay his subs, as he always has the receipt book with him. 4RC, 4RM, 4EW, es 4OB, all appear to be doing well and getting their share of the DX that's about. 4US, Charlie Miller, "R MAX" king, spent the Xmas and New Year holidays at Candle Mts, and states that the portable TNT did its work OK. Had a bit of trouble with chirp, but next time he goes away he will carry a packet of bird seed with him. Hi! B. Batts supplied the HT to the B406. 4FK becoming interested in 56 MX, says he is working on an oscillator and receiver, and hopes to test out at an early date. 4DR has been experimenting with 2A3 tubes in push pull parallel for audio work, and states they sure have some punch. 4AW spent the Xmas and New Year holidays with 4JM, of Nambour, both of these boys spent some time on installing all-electric sound equipment, and later worked fb 56 MC fone over a distance of three miles along the river through fairly bad screening. With the aid of the motor launch used at the receiver end, some valuable dope on directional properties of receiving aerials was obtained.

Cheerio 73 RY.

VK5 (SOUTH AUST.)

Conditions here in South Australia during the last month have been very patchy on all bands, although early morning DX on 7 MC is rather good between the hours of 4 a.m. and 6 a.m. 14 MC has not been too good, and not much DX is to be heard on this band. 5MU and 5WP are the most consistent early a.m. "DX hounds," 5WP being successful in working HB9Q, F8NY, OK2RM, OK2RP, ON4JB, G6RL, UN7AK, G6RB, ZT5R, and V8AF, receiving R7 from both OK2RM and ON4JB. 5WP will be at Robe for a fortnight from 29th January, and will have transmitter using 2 watts from batteries to a 171A on the 7 MC band, and he would appreciate contacts with both local and Interstate stations. 5MU is also working quite a good deal of DX. Our friend, 5QR, is down in VIA on his annual vacation, and is seen quite often with 5RT, running around on Bob's motor-bike. They called here one day and had a chew on their way down for a swim. 5QR has been stationed at Pyap for the last 18 months, and while there he has been using a very compact and efficient portable xmitter - receiver measuring only 12 x 9 x 4 inches, using 120 v. on an A415 in TNT circuit. Has QSO'd with W, ZL, and PK, and the average VK report has been R6. He is building MOPA now with Heising modulation, with an input of 6 watts. Has been running sked with 5RT on 3.5 MC every Thursday night. He says Pyap is excellent location for transmission and reception.

5RT.—Bob is our prominent experimenter with electron coupled oscillators. His new rig is built into a very nice looking frame and panel job, and comprises a 58 as EC oscillator, feeding into a pair of E406's as PP buffer stage, which are modulated with a system of grid modulation using an A415, this stage feeding a pair of QCO5/15's PPPA. The 7 MC tank for PA has 40 feet of wire in its make-up, and has no capacity across it whatever. Bob must be a staunch supporter of low C amplifier tanks. Receiver being used is a single signal super 5MU. Malcolm is working quite a lot of DX. His rig is a 4 stage CC with E406 in final. Uses a single sig super, and gave VE5FG R9 a short time ago, also has a brand new 866, but doesn't use it! Has now worked 35 countries in five continents.

5MB.—Merv now has job at local broadcasting station. Was married month ago, and hasn't shifted gear to new QRA yet. 5BY heard on 7 MC occasionally with VY FB T9 signal, and the old vibroplex doing her usual

swell job. Surprised everybody by attending a WIA meeting t'other night! 5RW, the Westbourne Park Radio Club, is on 7 MC with nice T9 signal, working plenty of DX, but are having trouble with receiver and power QRM. 5DQ joined the ranks of the 200 metre gang, and was heard often working duplex with 5ZC. Modulation percentage and quality from both was really good. 5MY, Harry is still working almost everything he hears. He uses 3 stage CC with 47-47-E406, and has 1.2 amps in ½ wave Zepp. During the last six weeks Harry has had 42 QSO's, only five of them being VK's. The rest were located in 16 countries in five continents. 5YK, "Rich" has been donig quite a fair bit of intricate experimenting on the 14 MC band, with a PPTPTG and 210's. Say, boy, have you found the centre of the band yet? Hi! Using Single Sig Super, can hear plenty, but QSO few! 5UK, Tom has the best SE signal in South Australia, and, combined with his excellent fast sending, it is a pleasure to work with him. The only fault Tom has is that he is not a member of the W.I.A.! QRA is 10 Thomas street, Unley. 5MD still using 4 stage CC rig with F443 final and 3 tube TRF receiver. Very QRL with duties of Federal Secretary. 5GO, George lives at the Parafield aerodrome, 14 miles from Adelaide, and hears all sorts of DX, including plenty of South Americans, but owing to the extremely heavy screening of his aerial by trees he can't QSO DX stations. 5LD, Launse has worked eight new countries on 20 metres this year, including SU, YH, YI, VU, PK, J, and HP. Uses Hartley with 245, and 82 rectifier with 18-20 watts. Says that DX very good on 40 m. between 0100 and 0400, especially for QSO's with Africa using 235 and 227 receiver. 5DX, 5WB, 5RM, 5ZC, 5KH, 5MD, 5RP, 5DR, 5WS and 5ML do their best on 200 metres every Sunday a.m. I think 5DX has the best modulated signal, and his transmission is a pleasure to listen to. Don uses a 3 stage CC rig with '47 OSC 47 buffer and TBO4/10 Class C. amp. 5MD went on a fishing trip in 5ML's speed boat, and got quite a decent haul of (?) fish. Ask 5MD how he felt when we were returning to the harbour with rather a heavy following sea. Hi!

On January 21st the S.A. Division of the W.I.A. are holding a cricket and tennis match at Hawthorndene, which promises to be a great event. Hope to publish individual scores in the next issue of "Amateur Radio."

5ML.

VK6 (WEST AUSTRALIA)

The January general meeting was held on Thursday, 18th inst., but owing to the hot weather only the old stickers arrived.

The meeting proved to be rather a lively one despite the adverse conditions, business for the Federal convention being an all nite task, and some job, too. Those present included the president, 6AG; secretary, 6JK; assistant secretary, 6LK; treasurer, 6CX; editor, 6KR; PB officer, 6RL; vice-presidents, 6GM, 6MN, 6CP, 6SA, 6PK, 6FT, and 6BN, who paid us a surprise visit. He has been on the sick list for sum time, but now we look forward to a comeback from Bert.

Conditions on 7MC have shown a slite increase for the better lately, and VK6 hams should all be in full swing by now.

6JK was unfortunate in receiving a nasty trick at his expense. We were sitting around his shack absorbing lime drinks, etc., when Mrs. 6JK came in and started to laugh, and amidst the laughter words came out to the effect that his mast was down. On investigating we found a mixture of wire, wood, mulberries, telephone lines and sum. It was later decided that lightning had played the trick. But that didn't stop Jack; he had another one up next day.

Exams seem to be the chief order of the day hr, and until March is over things are bound to be ver quiet.

Among those heard lately on 7MC were 6LK, 6CX, 6KR, 6BO, 6RA fone, 6CP fone, 6MN, 6FO, 6LR, 6GF, 6AM.

6KR has been qrl wid Fed Convention in Adelaide, and as nothing has come to hand at time of writing, full details will be given at first VK6 meeting.

While 6KR is in the east 6CX will be wrking his (6KR's) xmitter so that he may find out what other hams have to put up with.

The following has been received from 6LJ, manager of QSL Bureau:—

Sa, young squirts, attention!

Last October, 1933, the PK gang held a DX contest and qso'ed a number of

VK hams; also the VK hams failed to send QSL's when they promised to do so. Now, if this gets around, the name of VK will be trodden under foot. So if your call sign appears below pse send a crd either direct or thru me to PK. The particular stn which is most concerned is PK3BQ:—

VK2—2OZ, 2YL.
VK3—3ET, 3UH, 3ZM, 3PQ.
VK4—4MY.
VK5—5ML, 5FL, 5RH, 5JH, 5ZY, 5BC, 5KQ.

VK7 TASMANIAN DIVISION

The large increase in members of this division during the past months is undoubtedly the reason why some further activities should be provided within the Institute to absorb the interest of these new recruits, and also to encourage new members to join.

With this idea in view, a committee was formed to investigate the problem, and at the January meeting a list of items was brought forward and a general discussion followed.

It was decided to form groups so that every member, whatever his status, would find something to interest him. A short wave group, for instance, is to be formed, so that new members will be able to break-in on short waves with the help and advice of those who are further advanced. At the present time, a new member's interest is often confined only to the monthly meetings, with the result that his attendance becomes less and less, and is eventually listed as one of the "has-been" members. It was decided also to hold the field days much oftener—about every two months or so if possible.

Coinciding with these intended increased activities comes the decision that the Institute shall at last change its location. Two rooms over Medhurst and Sons', in Collins, have been decided on, and are a very great improvement upon the present ones. The change-over is to be made almost immediately.

Surely these activities will mean a turning point in the division's history, as yet another change is to be made, this time in secretaryship. Since the resignation of Mr. Harrison (7CH) in July last, Mr. Buring (7RB) has held this hard-worked but seldom-praised position in a very commendable manner, despite the fact that his time is very limited. One of our new "live-wire" members (Mr. Moorehouse) has agreed to take the position, so that, together with the other changes, there seems no reason why this division should not prosper and become one of the leading organs of the W.I.A.

Jottings.

Condx on the various bands have been vy erratic hr. On 80 MX Interstate sigs are at times vy weak, and at others they come in with heaps of punch. 40 MX up till abt Xmas time was gud for DX, but since then has been vy poor indeed; only occasionally has there been anything like a normal period of operation. 20 MX yields some DX if it is possible to listen there all the time, but it isn't worth wasting time and juice on at present.

7KV has worked several Asiatics, also some G's and an OZ. FB OM. The rig is a MOPA, with E406's in PP in the PA. 7JB active, as usual, es gets his share of DX. 7CH is active with Xtal rig es bug! 7CW pounds brass occasionally now on 40 —Xtal, of course, with a 50 watter in the final. 7WR has for sum time now been on the "B" class stn, 7UV, on the North-West Coast, so I gess the BCL's miss the usual Sunday morning programme. 7PK has now given up teaching, es is also at 7UV. 7JH is a new ham located in New Town, es puts out a vy nice sig, using 171A's in PP TNT. 7PA is another new sig, es has worked sum VS6's, es I think a K6 also, using quite a number of watts on sum poor ole 245's. 7GE is on at times with the usual DC sig, and works Yanks when condx permit. 7MM is not heard much owing to being QRL wid work, but plans a new xmitter, es then will be heard much more. 7CP es 7LZ are also active—mostly on 80 MX.

There are nw three ex-VK3 hams in Deloraine—3OJ, 3GP and 3JO. Most work is done on 80 MX, although 40 MX is sumtimes given a try.

Well, OM's, gess QRU nw, so will CU agn.

73 FM.

VK7NC.

VK3NQ qso VK3PG, 90 miles distant, using half volt on the plate. "Not bad," says 3NQ, "but old OA2CM qso ZL on 160 metres, back in the early days of radio, used only quarter volt on the plate."

NORTH SUBURBAN RADIO CLUB (VK3FY)

On Monday, January 22, the half-yearly meeting of the above club was held at the clubrooms, 354 Rathdown street, North Carlton.

The secretary and treasurer, Mr. W. Wonder, presented the statement for the half-year, which showed the club to be in a very good financial position.

The election of officers then took place, and the following were elected:—President, Mr. W. Murden, 3TY; vice-president, Mr. A. Stow, 3AS; hon. secretary and treasurer, Mr. F. Maher, 3FZ; assistant hon. secretary, Mr. J. O'Brien; committeemen, Messrs. Dowling, Wonder and Smith; publicity officer, Mr. W. Wonder; delegate to W.I.A. (fone section), Mr. W. Wonder; delegate to W.I.A. (key section), Mr. R. Dowling; auditors, Mr. T. Evans and Mr. H. Goldberg; technical committee, Messrs. Dowling, Evans, Stow and Murden.

Mr. W. Murden recently passed his AOPC, and his QRA is Mansfield street, Thornbury.

The meetings for the month of February will be held on the 5th and 19th inst. at the clubrooms at 8 p.m., and all interested are invited to attend.

VICTORIAN QSL BUREAU

Cards for the undermentioned stations are on hand at the above bureau, 23 Landale street, Box Hill, and will be forwarded on receipt of stamped envelope:—BX, CB, CG, DY, EM, ER, ES, FC, FM, FY, FZ, GA, GU, GX, HT, JM, JO, JX, JW, JY, KA, LP, MH, MM, MQ, NC, NG, NK, NR, OF, OM, OP, OV, OY, OQ, OZ, RN, RQ, RT, RW, SB, SK, TP, UJ, VU, WB, WH, WK, XK, XQ, XX, YL, ZB, ZF, ZL, ZM, ZX.

The picturesque card mentioned in last month's "Amateur Radio" as being worthy of a place on any shack wall is that of VS3AE, not VS3AB, as was erroneously stated.

DX hounds should carefully note the alteration to the prefixes of the following countries:—

Country.	Old Prefix.	New Prefix.
Austria . . .	UO	OE
Hedjaz . . .	UH	HZ
Lithuania . .	RY	LY
Luxemburg .	UL	LX
New Hebrides	YH	YJ
Panama . . .	RX	HP
Persia	RV	EP or EQ
Roumania . .	CV	YO to YR
Saar	TS	EZ
U.S.S.R. . . .	AU & EU	U
Vatican . . .	—	HV
Yugoslavia .	UN	YT or YU

Entry forms for the forthcoming BERU tests may be obtained at this bureau or from any of the BERU sub-reps.

Listeners sending out report cards would be well advised to adopt some distinctive call sign, as the customary "VK3" or "VK3QSL" are utilised by scores of listeners, and QSL managers are not blessed with sufficient second-sight to be able to determine the rightful owners of cards acknowledging the receipt of listeners' reports. Transmitters can assist QSL managers in this direction by quoting the listener's distinctive call-sign, or preferably the full address, when replying to listener reports.

Moroccan hams who heretofore have belonged to the Radio Emitters Francaise have severed their connection with this association and have formed a ham association of their own. They propose to affiliate with the I.A.R.U. The secretary of the association which is styled Reseau Emetteurs Maroc is CN8MD, and the address is CN8MD, M. G. Daussy, Ecole des Roches Noires-Casablanca, Morocco.

PK hams would be grateful if all VK stations working PK during the last six months would forward cards verifying the contact. The cards are necessary to enable the N.I.V.I.R.A. to determine the winner of its recent DX contest.

Writing to the manager of the VK3 QSL bureau conveying thanks for QSL services, Robert Guthrie, W9IH, mentions that numbers of the members of the Milwaukee Radio Club are on 28 MC at times, corresponding to 1800 GMT Saturday, to 0400 GMT Sunday, and are on the lookout for VK and other DX. They have been successful in hearing and contacting stations situate on both coasts of the U.S.A. and in Canada.

R. E. Jones, VK3RJ, QSL Manager.

R.A.A.F. Wireless Reserve Notes

VMC

Total No. of Messages 1427

Average per Station 75

VMC4

Total No. of Messages 811

Average per Station 135

3D6

Total No. of Messages 375

Federal Notes by the C.O.

The principal feature of this month's notes is the announcement of the winner of the Ramsay Trophy for 1933. It gives me very great pleasure in awarding 3C6 this valuable trophy for not only participating in the contest, but for returning a practically flawless copy of the 400 odd word broadcast message. This is obviously the outcome of keen concentration and enthusiasm on 3C6's part to see that the cup would at least remain in VMC. He is to be congratulated on having attained the high standard of operating in R.A.A.F. procedure that he has in such a comparatively short time. A special meeting of the VMC members is being called in order that the presentation may be made in front of his fellow-reservists.

Of any contests that I have had the task of adjudicating this has certainly been the hardest. The standard of all entrants was so high that it was only after hours of close study of the returns that the winner was decided upon. The Reserve has something to be proud of. It would be hard to imagine any other organisation in the world that has operators of such a high standard. An honourable mention must be made of the efforts of 3Z4, 4Z1, 3B3, and 3Z2. They stand out as a class of their own. Nevertheless, when one considers that the average number of mistakes for all entrants was only five in the 400-word message, one will realise that the others put up a remarkably good show.

Next year the award will be slightly different. It will be made on the standard of a member throughout the twelve months. Many items are to be taken into consideration as well as a general broadcast. Full details of the award will be circularised to all reservists shortly.

The second feature of this issue is the commencement of the monthly traffic awards for Districts, Sections and Individuals. This has been fully explained before, but for those outside the Reserve who hold some interest in its activities the scheme is outlined below.

With the object in view of creating more and more interest in their work, the reservists are being awarded, monthly, an honorary award for their efforts in originating traffic.

As with any sport or hobby, plenty of practice is required in order to become proficient in the art. Consequently it was thought that to encourage members to put traffic into circulation, and thereby exercise their knowledge, an award of some kind would be given in return for their efforts. This obviously means that, as long as there is an ambition behind each member, his spirit and enthusiasm will never wane.

The awards are three. The first, the "Crown," is for the district that returns the highest originated traffic total for the month, on the basis of membership to total. That is, the total is divided by the number of active members, giving a message-per-head return. This is necessary

RADIOTRONS

FOR

AMATEUR AND EXPERIMENTAL RADIO USES

● RADIOTRON UX-841 is a 3-electrode high mu, voltage amplifier tube, designed primarily for use in resistance-coupled circuits. It is also useful in amateur transmitters as a crystal-controlled oscillator, and as a radio-frequency doubler and amplifier. Filament volts, 7.5. Power output (Class C), 10 watts.

● RADIOTRON Type 852 is a 3-electrode 100 watt transmitting tube designed for use as an oscillator and r-f power amplifier, particularly at frequencies above 3000 kc. Filament volts, 10. Normal plate volts, 2000.

● RADIOTRON Type 864 is a 3-electrode tube of the general purpose receiving type, especially desirable in services where freedom from microphonic disturbance is required. Filament volts, 1.1. D.C. maximum plate volts, 135.

● RADIOTRON Type 865 is a 7.5 watt screen-grid, low-power transmitting tube for use as a radio-frequency amplifier, especially for frequencies above 3000 kc. It is also very useful as a crystal-controlled oscillator. Filament volts, 7.5. Maximum plate volts, 500.

● RADIOTRON Type 866 is a high-voltage half-wave rectifier tube of the hot-cathode mercury-vapour type. Its large D.C. current capacity and its low tube voltage drop make it ideal as a rectifier for the medium-power amateur transmitter. Filament volts, 2.5. Maximum peak inverse volts, 7500. Maximum peak plate current, 600 ma.

For additional information on these types write to

AMALGAMATED WIRELESS (A/SIA) LTD.

WIRELESS HOUSE, 167-9 QUEEN STREET, MELBOURNE.

● **Ask for RADIOTRON Characteristic Data Chart.**

when one has districts of a varying number of members, in order to put them on the same footing. The second award, being the "Plume," is given to the section that returns the greatest total. The "Star" is the award for the individual member who puts up the highest total of anyone in the Reserve for that month. Consequently the three are interlocking. Each member must pull his weight for the sake of his section and district, as well as for himself.

The scheme has started off extraordinarily well, as the first award shows. The members who helped to put up such a score for VMC for the first month are to be congratulated on their fine efforts. It must be borne in mind, however, that consistency is the thing to aim at, and not special super-efforts now and again. One can hardly call this a contest to see who can put up big scores, although it creates friendly rivalry between districts, sections and individuals. The call signs of the winners each month will be placed alongside the awards at the top of our first page. Traffic returns and personal notes are to be in the hands of the District Commanders by the 20th of each month. This is the monthly closing date, so bear it in mind.

DISTRICT NOTES.

Third District, by 3Z1, VK3UK.

It was with a feeling of regret that we heard that 3A1, 3A2 and 3A6 would be unable to continue as active members, at any rate for the time being. Although 3A1 was a new member, by the speed with which he picked up procedure, and his general operating, it would not have been long before he would have been one of our most efficient stations. All members join with me in extending to him our deepest sympathy in his recent sad bereavement, in the death of his brother. 3A2 and 3A6 have been associated with the Third District almost since its inception, and have always been right up with the leaders in any of our contests. It is enthusiasm and hard work such as theirs that has done more than anything else to put VMC on the firm footing it now is. Each of these stations is unable to carry on owing to various circumstances, but we sincerely hope that it will not be long before they are actively back on the job again.

On 21st January we changed over to our new Section Commanders. This now gives the Number Three man in each section the opportunity to show his organising ability. The stations who have just finished their term of office had the task of organising their section traffic in preparation for the Federal Traffic Awards each month. As the results show, their efforts have been attended by wonderful success.

VMC's members always seem to be on the move somewhere, and this month, being holiday time, has seen more than the usual number away from home. 3C2 is often heard keeping schedules when at Berriwillock or Birchip, and using the local ham's gear. 3C3 has been down in the city recuperating after his recent illness, and his "Suntan" and health now speak volumes for the effect of Melbourne's beaches. 3Z4 left for Tasmania early in the month, and will be staying there for some weeks. 3D4 is expected in the city towards the end of the month on his annual holiday. Over the Christmas vacation we had a short visit from 3B5, and during the same period 3Z1 spent his time at Palm Beach, N.S.W., golfing and surfing.

The main interest this month has centred around the inauguration of the monthly traffic contest for all districts. VMC closed down active schedules from 17th December to 7th January, so the totals for our district perhaps are not so large as they otherwise would have been. All stations have worked hard to make our totals difficult to beat, and we are now eagerly awaiting the results.

Fourth District, by 4Z1-VK4AW.

Conditions generally in VMD during the past month have been anything but reliable. Static has been very bad on 4155 kcs, so much that watches have been kept on 6555 kcs. Interference on the latter frequency from commercial and army stations has been troublesome, which stresses the point in favour of reliable frequency meters or crystal control for D/C's as markers.

4B1 has moved to a country area, and will be off for quite a while until a power supply is available. 4B4 is keeping watches fairly regularly with a portable outfit, being located at a power line construction camp! 4A1 has blown his power supply, but promises to be on by the end of February

and to take over the duty of Deputy D/C.

4A2 has moved over to an A.C. area and is coming in with a shade more strength. The traffic total award scheme is well under way here, and February should see some totals.

Fifth District.

Owing to the resignation of the VME D/C being recently accepted this district is at a standstill. However, it is hoped that the South Australians will not let the Reserve down by allowing their organisation to lie dormant.

Sixth District, by 6Z1-VK6MN.

The first step of real progress has been made by 6Z1 and 6Z2 getting on to 6555 kcs. Mid-week watches find these stations on that frequency, whilst the Sunday morning watch is being conducted on 7 MC band until the power permits are received, when all watches will be on Reserve frequencies. Much of the holidaying spirit still prevails in the metropolitan area, but a new enrollment is expected any day, namely, 6RA. He has a Trit-Tet crystal oscillator just completed, and is working well. 6Z2 has been short of operators, but the chief op never fails to maintain a Reserve watch or a BERU schedule. Country members have been quiet; 6FL has not been heard as yet from his new abode. 6FM is busy, but manages to get on. With 6WX and 6XL in his vicinity he would be doing VMF great service by enlisting them. 6BO, in the far North, has not been heard of this month, apparently owing to adverse conditions. 6RW is likely to be enrolled any minute now. He was in Perth over Christmas, and expressed a desire to join the throng. Amateurs in this State with transmitters on the air, and who are keen on traffic, and R.A.A.F., should get in touch with the District Commander, 6MN.

Seventh District, by 7Z1-VK7RC.

We have made a start with the traffic for the monthly awards in this magazine, and after a few short trials things seem to be running along very smoothly. Due to the fact that we tried to keep traffic going on the 3.5 MC. band, but failed to some extent because of static, our totals for this month may seem rather weird. As all our stations are low powered it is difficult to break through the static, and we have therefore reserved Sunday mornings for the traffic work. The weekly broadcast is given on Tuesdays from 7Z1, and when conditions do not permit satisfactory reception those who have received it 100 per cent. relay it to the less fortunate stations. 7Z3 attends the weekly broadcasts given by 1A1, but finds fading very bad at times. It would be very handy if some of the other D/C's were to keep on watch longer than they do after the broadcast, and relay it to us when these conditions arise. 7Z3 is using an E.C. oscillator on 6555, and gets a pure signal that is indistinguishable from C.C. 7CD has a new push-pull T.P.T.G. for 7 MC work, but sticks to the Hartley for 3.5 MC Reserve work. The only trouble with the Hartley is that with the '45 overloaded there is an appreciable change in frequency as time progresses, and whilst 7Z1 is standing by for 7CD to write out messages the signal has changed 10 kcs (more or less) by the time he has thought them out! 7CP and 7LZ were late with their reports this month. 7LZ went camping at Xmas time and took a portable with him to keep Reserve watches. All members are looking forward to the R.A.A.F. aircraft that is expected here for the Pageant next February. 7Z1 has been presented a silver cup by his sister for a contest amongst the VMG boys, and wants to know what to do with it! Come on, VMG, and radio some suggestions tout suite.

Traffic totals for January:—7RC, 30; 7JW, 36; 7CP, 26; 7CD, 35; 7LZ, 11.

HARMONICS

VK3ES is a champion bagpipe player. The last time we saw him he was endeavouring to eliminate the audio feed-back in the chanter.

* * * *

The Editor's Christmas mailbag contained a card which read as follows:—

> "VK3WE ventures to wish you a Happy Christmas, and trusts that during the New Year you will work fb, dx, and not be worried by blown tubes, busted xtals, qrn, qrm, short ckts, run-bats, yl's or oscillating bcl's.—Bill Williams."

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Rush your order for QSL CARDS to A. R. Cook, Printer, Mordialloc, S.12 (Vic.).

HARMONICS.

Users of pentodes as C.O. are advised to use a low C tank circuit to match the tubes' impedance as near as possible. Then watch the R.F. ammeter rise! VK3ML.

Increased circulation and direct support to our advertisers is the keynote to our continued success. Purchase only from those advertising in YOUR journal, and, at the same time, establish goodwill by mentioning "Amateur Radio."

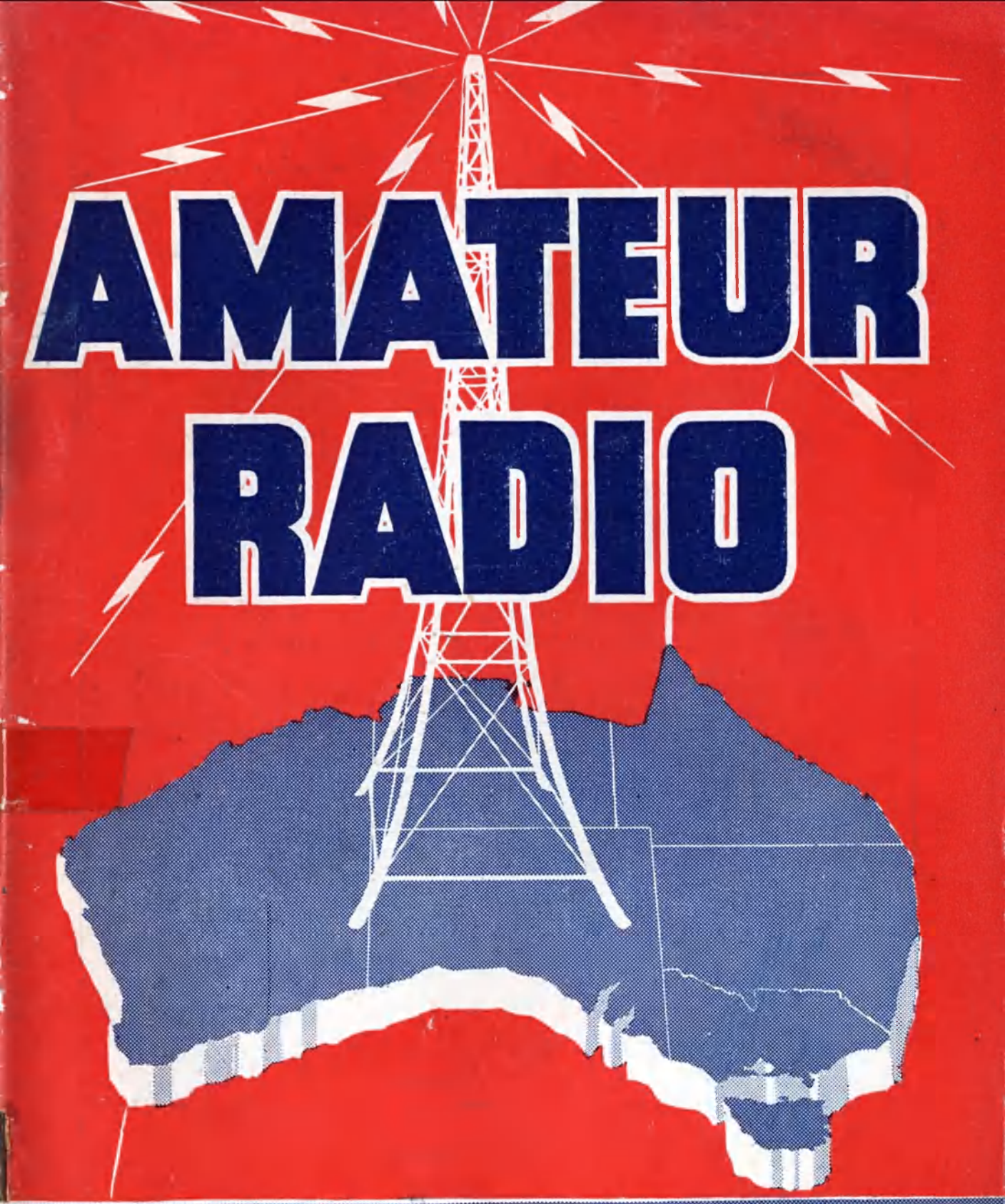
INTERNATIONAL NEWS

The Polish amateurs staged an international competition under the auspices of their national society, P.Z.K. The rules provide for the winner being the Polish station securing the highest number of contacts with dx stations, and the successful exchange of a cipher group. Only one contact with each Polish station is allowed, and proof of contact is by qsl card, on which the correct cipher must be stated. The three foreign stations securing the highest number of points will be awarded special diplomas. Cards verifying test contacts, and quoting the cipher, should be sent to P.Z.K. or to this bureau. The test commenced at 00.01 G.M.T. on December 17th, and concluded at 24.00 G.M.T. December 30th.

VK3WL, who has been ill for some time, is now doing well, and we hope he will enjoy a speedy recovery to full health. His B.E.R.U. activities are temporarily in the hands of VK3RJ.

WILKE & CO. PTY. LTD., Printers, 241-245 William Street, Melbourne.

AMATEUR RADIO



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MARCH, 1934

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Most of these valves have an oxide-coated filament; this gives great mechanical strength and a high thermionic emission, notwithstanding the very small filament wattage.

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	Triodes.				Screen-Grid. Valves.		
TYPE.	TC 03/5	TC 04/10	TC 1/75	TB 2/250	QC 05/15	QB 2/75	
Filament voltage	4.0	4.0	10-0	11-0	4-0	10-0	V
Filament current*	0.29	1	1-6	3-8	1	3-25	A
Saturation current*	100	400	1500	2000	400	2000	mA
Anode voltage	150-300	200-500	800-1500	1000-2000	400-500	2000	V
Screen-grid voltage	—	—	—	—	75-125	300-500	V
Max. anode dissipation	6	10	75	150	15	75	W
Anode dissipation on test	10	20	100	200	20	100	W
Max. screen-grid dissipation	—	—	—	—	3	15	W
Amplification factor*	6	25	25	25	225	200	
Mutual conductance (slope)*	2.3	2.0	5	4	1-4	1-4	mA/V
Int. resistance*	2500	12,500	5000	6000	160,000	150,000	R
Anode-grid capacity	—	—	—	—	.001	.02	mm/F

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EDITORIAL

After every A.O.C.P. examination there is evident on our bands a number of new signals. Another group of men are starting off into the greatest game on earth, and each new signal increases the responsibility of the older station, who has this grand old hobby, Ham Radio, at heart. It is the seasoned Ham who must help the newcomer on the air, who must give him the necessary confidence to handle a key properly when QSO-ing, teach him the Amateur Code, and show him, by example, the real meaning of this "amateur spirit" of which we are all so proud.

First impressions are lasting ones, and an old-timer cannot be too patient with the newcomer. We all had to make a start ourselves, and all of us, except those with very short memories, can vividly recall the nervousness during those first QSO's. If we were lucky enough to contact a REAL Ham first, we can remember our gratitude when he "QRS-ed" and when he gently corrected our mistakes. In consequence, our confidence came rapidly, and we became imbued with this Ham spirit and the desire, in our turn, to assist others as we had been assisted. Unfortunately, the "spirit" seems to evaporate quickly with some of us, and the desire to co-operate and assist gives place to selfishness.

There are few things in this life of ours which can be as completely upset by individual selfishness as our own hobby of Radio. A poorly neutralised transmitter giving a broad AC signal, a wave that is creeping, key clicks and thumps, long, senseless CQ's, using phone during DX hours are only a few of the many things which can irritate and annoy, or even curtail the pleasure of hundreds on our crowded narrow frequencies. Every month the position becomes worse, the number of active stations is increasing, and, although we are acquiring more knowledge regarding selective receivers, steady, pure signals, and the like, the percentage of selfish stations is, at the best, not decreasing.

Every amateur journal has appealed to the Ham fraternity at some time or another to stop selfish operating, and nothing is further from our thoughts than to weary our readers with senseless repetition of the same subject. For our own sakes, here in Australia, though, let us become considerate to our fellow-Hams by helping the new man and co-operating with the old. Let us improve the operating conditions on our bands by taking a pride in our signal and in our procedure on the air. If we desire a more pleasant state of affairs, the remedy is in our own hands.

All VK stations will naturally be extremely interested in the preliminary details of the first Australian-run International Contest, to be found in this issue. Besides proving an extremely interesting contest, by participating, Australian Hams will have the satisfaction of knowing that they are doing their share towards advertising Melbourne's Centenary. Between now and the commencement of the test, no QSO, whether Interstate or DX, should be complete without some mention being made of it to the station contacted. The more VK's competing the keener will be the interest overseas, and, remember, the foreigner will be as anxious to QSO you as you will be to work him. Think of the possibilities of "landing" that elusive African or South American who has held up that WAC for so long! The fun will be fast and furious, to say nothing of the wonderful prizes to be won, so advertise your first International Contest.

THE EDITOR.

An Economy Super Three with Five Tube Performance

By Bruce Mann, Quambatook.

There have been many economy supers devised during the last year or two, but in almost every case the economy comes at the expense of performance. Here is a set which definitely is economical, yet without any sacrifice of tone, sensitivity or selectivity. This is, in short, reflexing brought up-to-date and made near-perfect.

The writer has built many of these supers, and they are all quite free from temperament and have always worked from the word "Go." It is not proposed to describe any one set in detail, but rather to deal more with the theory and leave the intelligent constructor to adapt the ideas to suit his own requirements, for either batteries, AC, DC or universal.

There are several alternative types of frequency changing systems in common use, but in this economy job the new Pentragrid converter seems preferable, as it is cheaper, simpler and gives greater gain. The first decision one must make is to choose the intermediate frequency, and for most practicable purposes the choice lies between 175 KC and 465 KC. The former frequency requires a 3 Gang condenser, and preselection, in order to avoid image interference. This increases expense and complicates matters, but increases adjacent channel selectivity. Further, intermediate transformers of this frequency are more selective and give more gain. It must be remembered, however, that the greater gain is offset by the loss in pre-selection.

The thermal agitation noise level will be less with the 465 KC system as the signal input will be greater to the grid of the converter, where there is no pre-selection. The 465 KC intermediates are also less likely to clip the sidebands so that the high note response will be better using this system.

Therefore, if one wants ultra-selectivity, use the 175 KC system, otherwise use the 465 KC frequency for cheapness, simplicity, tone and silent background, the gain being about the same in each case.

An examination of the circuit diagram will show that a 2B7 or 6B7 diode penthode tube is used as the IF amplifier, diode detector and then as the audio amplifier by reflexing. This tube, with 250 volts on the plate, and 50 per cent. modulation will feed 36 peak volts AF to the grid of a penthode power tube, and will, therefore, easily load up any penthode on the Radiotron chart, so the reader must choose the one that suits him best. One point to remember is that the screen grid voltage to the 2B7 tube is critical at about one-fifth of the plate voltage.

Volume is controlled by a 500,000 ohm potentiometer, which serves as a load resistor to the diode. A local distance switch may be needed in addition by city hams. For example, a resistance may be switched across the aerial terminals on strong local signals.

When purchasing the coil kit it is important that the oscillator coil and padding condenser are designed for the pentagrid converter, at the intermediate frequency to be used. The internal capacities of the various types of oscillator tubes differ so much that the coils are not interchangeable. Care should also be taken in mounting and wiring the padder condenser, to see that it is held firmly, as any variation of capacitance to the chassis will upset the padding.

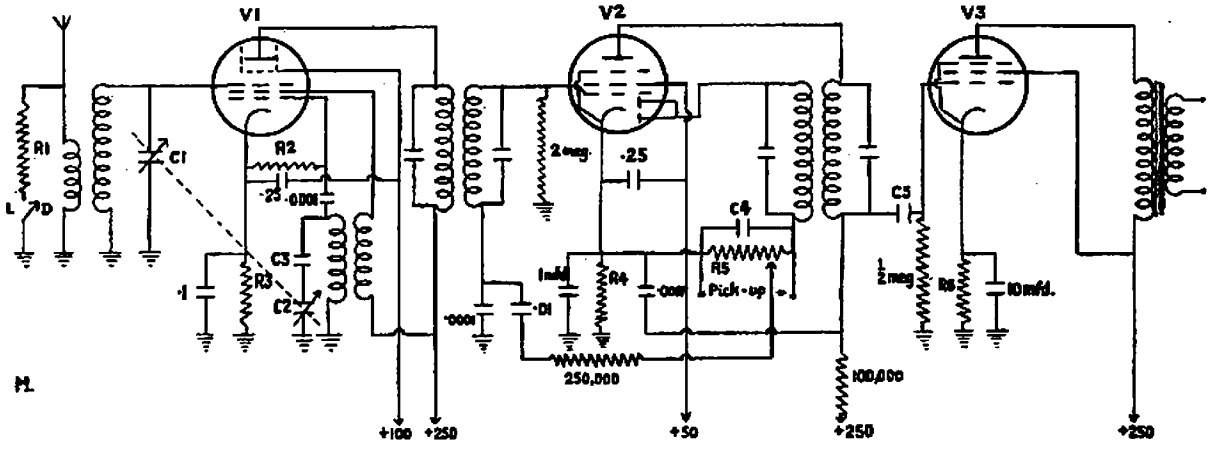
Having assembled and wired the set and checked the wiring, apply the power and test the audio end with a pick-up. Having proved that it is working correctly, try the set on the air. If there is no sign of life, most likely the oscillator is not functioning. Try reversing the plate leads to the oscillator coil. Next choose a sharp signal on which to line up the intermediate transformers. Be

sure to avoid hand capacitance in this job. The intermediates are usually fairly accurately tuned by the manufacturers, so this is merely a final adjustment required to make up for the different wiring capacitance of the particular set.

Next comes the tracking and padding. Remember, throught this operation that the oscillator tuning determines the dial setting in every case.

With the set tuned to, say, 3AK, adjust the trimmer on the oscillator gang of the condenser, so that this station comes in at about one degree on the dial. Now tune to a station between 1300 and 1400 KC and adjust the aerial tuning condenser trimmer until it peaks. Next tune in 2CO, then set the dial at 99. Adjust the padding condenser in the required direction to bring in 2CO on 99 degrees. A slight re-adjustment may now be necessary on the 1300-1400 KC station. Mark the position of the screw slot on the aerial trimmer and, starting from the bottom of the band, tune in a station about every 10 degrees. On each station, turn the trimmer to find where is peaks. If it peaks at the marked position, all is well. If not, then bend the slotted plates either in or out, as required, until the peak comes at the marked position. Should the bending of the slotted plates on the condenser not give enough adjustment, the oscillator gang plates may be bent in the opposite direction at the corresponding position.

If the kit is badly matched it may prove very difficult to line up the set satisfactorily, and if difficulty is experienced by the constructor, the writer will be only too pleased to assist. The "Golden Range" of tubes will shortly be tried in this type of set using probably, E452T as Autodyne, E444 for IF, Det., and Audio, and 2A5 type penthode. This should give huge gain but will probably need a good deal of stablising.



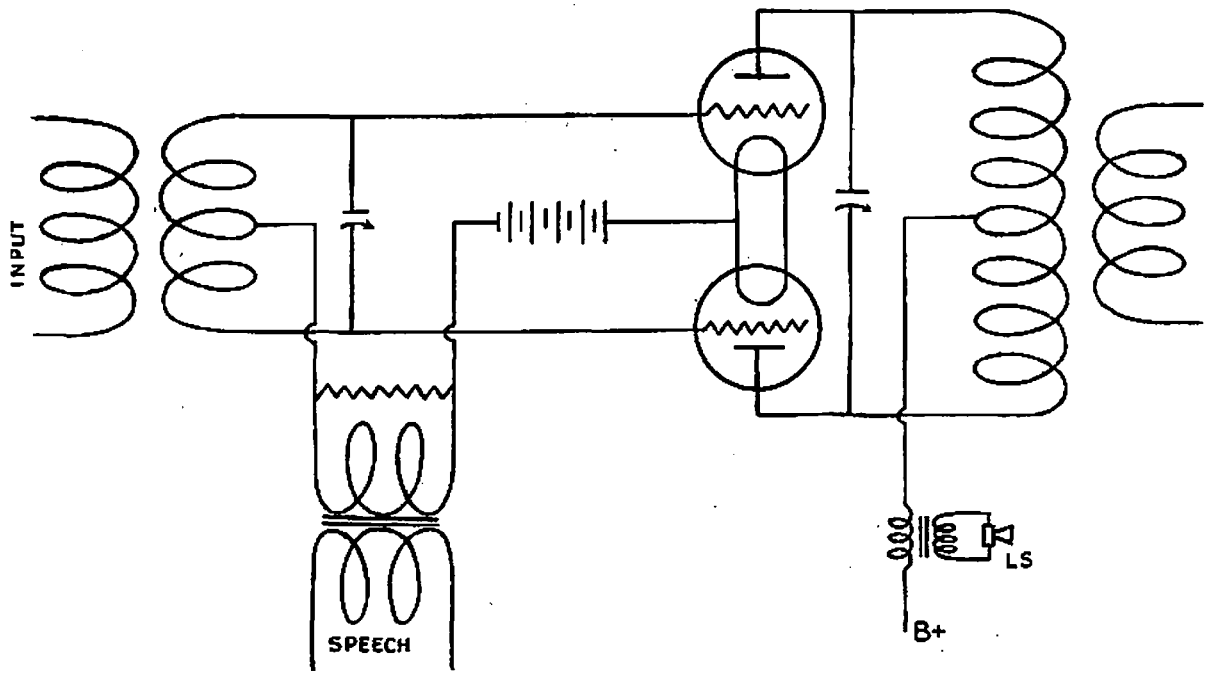
C1 & C2	Gang Condenser
C3	Adjustable Padding Condenser
C4	.0002 mfd
C5	.01 mfd (Mica)
R1	100 ohms
R2	50,000 ohms approx.
R3	250 ohms. (If unstable, increase to 450 or 600 ohms)
R4	Bias resistor depends on the plate voltage.
	For 100 volts on plate use 2000 ohms.
	„ 150 „ „ „ „ 1800 „
	„ 175 „ „ „ „ 1700 „
	„ 200 „ „ „ „ 1600 „
R5	500,000 ohm
R6	Bias resistor to suit the power tube used.
V1	6A7 or 2A7.
V2	6B7 or 2B7.
V3	2A5, 41 or 42.

Grid Bias Modulation

A summary of a lecture given to the key section of the W.I.A. (SA Div.) by F. O'Grady, Esq., Transmission Engineer' at 5CL and 5CK.

By VK5MU.

This particular system was tried extensively by earlier experimenters, but in all cases the results were disappointing, due mainly to distortion in the output. It has been found recently that the main cause for the non-success of these early experiments was due to their modulating a self-excited oscillator, and the consequent presence of grid current. This system can, therefore, be used successfully if the modulated tube is an amplifier, which is not driven to the point where grid current will flow. The advantages will be immediately apparent to readers, as there will be a reduction in the number of stages in the transmitter, or, alternatively, in the speech amplifier, and also in the elimination of the need for large audio chokes.



The modulation system described utilises a push-pull amplifier, and is derived from the method employed in carrier systems. The carrier is fed into the push-pull stage, and the phone into the two tubes acting in parallel. Referring to the circuit, the load resistor shown across the audio input is usually a non-inductive resistor of about ½ megohm, and the transformer a Ferranti AF5 (1-3 ratio).

Adjustment and Operation.

For the speech amplifier a small receiving tube will be sufficient to swing the grids of the push-pull amplifier. The bias in the amplifier is adjusted, so that the tube just draws plate current with the normal CW plate voltage and NO excitation. The excitation is then applied and reduced until the RF voltage swing to the grids of the amplifier tubes is equal to half the value of the negative grid bias being applied as described above. (A meter for measuring the RF voltage is described below.)

The modulation is then applied and

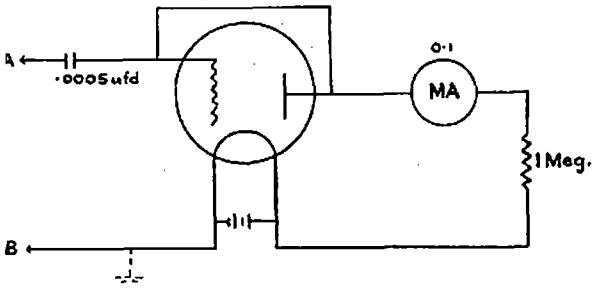
the gain control adjusted until the grids of the push-pull amplifier have an audio grid swing of half the value of the grid bias voltage on modulation peaks. Thus on modulation peaks the grid bias on the amplifier tubes will equal zero, but as they do not reach positive potential no grid current can flow in the circuit. Therefore if the RF voltage swing is adjusted correctly a milliameter in the grid circuit will enable the audio input to be adjusted to the correct value by increasing the audio input until the meter just moves on modulation peaks.

Since the two amplifier tubes are in parallel with the modulation, the audio component will be present in the wire feeding the plate voltage on to the tubes. If desired, a good quality audio transformer can be placed in this lead, and the output coupled to a pair of headphones. Thus the output can be continually monitored.

Every system has its disadvantages, and this one is no exception. Since no grid current can be allowed to flow, the efficiency is fairly low, compared with amplifiers of the Heising type.

A METER FOR MEASURING RF VOLTAGES.

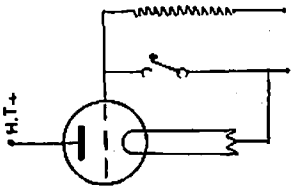
The meter is simply a 1000 volt DC meter with any tube acting as a diode rectifier. The two wires, A and B, are placed on the two points of a cir-



cuit, and the RF potential difference between the two points is read directly on the meter. B is only earthed when one point of the circuit to be measured is at earth potential. The filament supply is DC, and, except in the case mentioned above, not at earth potential.

ELIMINATING THOSE KEY CLICKS.

In reconstructing VK3GQ and installing the late 3BG transmitter for RAAF WR work, both on 7 mc and 3.5 mc, the trouble usually experienced with BCL's and key clicks was anticipated, and tube keying was installed. After many experiments the final arrangement shown in the sketch is self-explanatory, and, no doubt, will be of interest. Click elimination is complete even when using up to 250 watts on 3.5 mc and testing with a broadcast receiver within 6 feet of the transmitter. With the B/C re-



ceiver 25 feet away in another room all Melbourne stations could be listened to 100 per cent. in daylight. As both 3AW and 3KZ have a very low field strength in this locality, the sensitivity control on the receiver is tuned almost fully on for these stations. The excellence of this system can only be appreciated after having used maximum impact filters and experiencing objectionable interference on all stations except 3LO and 3AR, under the same operating conditions. The filter is most efficient when used on the stage following the CO, and in this case a A415 tube breaks about 30 mills.

HARMONICS.

We understand that there is to be a pilgrimage of VK3 hams, who are looking for WAC certificates, to Mathoura, N.S.W. VK2JJ informed those present at the last Key Section meeting that the easiest continent to contact is South America!

VK3DH has discovered a new type of barometer. He has an 0-2 hot wire ammeter, and when not registering radiation it reads well below scale in changeable weather, and about .2 amp. when wx is fine and warm.

Centenary Celebrations

(By VK3ML, Manager Centenary Contest Committee.)

Announcing the Melbourne Centenary International DX Contest:

When? During the four week-ends in October, 1934.

For whom? A contest for both transmitting and receiving stations.

With whom? The whole world! VK works the world.

Thus, in brief, the Victorian Division of the WIA announces the first Australian International DX Contest. The test is being staged to give publicity to and celebrate Melbourne's Centenary, which commences in October this year.

This will be the first time in history that any division or even the F.H.Q. of the W.I.A. has staged such a magnitudinous undertaking. We have all been the "guests" of the W's and G's often enough and have thoroughly enjoyed their tests. Now it's our turn to offer one in return. We are inviting the whole world to come and contact as many VK's as they can. Our stations will only be asked to work as many DX stations as possible. That's easy enough? To each station contacted, a serial number is handed, and one is received in exchange. Together with this, a signal strength report will complete the QSO.

The scoring will be one point for each 1000 miles of QSO. Thus, the test is a combination of BERU and ARRL ideas, but we are going one better in several points.

To add to the fun of the Test, the VK's will multiply their total by the number of Countries worked and those outside VK, by the number of VK districts contacted. What scores are possible with about 100 Countries to work! Don't forget that the QRP merchant will get his "kick" out of the contest, because the world will be listening for even the squeakiest signal! It's a chance for everybody. If WAC's and WBE's are not won by the dozen; then don' blame us!

The S.W.L. will have his share of the fun too. The contest provides for a separate test for receiving stations in all parts of the world, and they are eligible for awards also. The full details are given in the rules below.

Awards? Certainly. For the winning VK we hope to offer a brand new 852. The second and third prizes will probably be a 50 watter and a thermo couple meter, respectively. These have not been chosen to-date, but we want to get the "dope" on the test out early, so that it will give you time to chat the world up about it.

The success of the contest depends on the number of VK's entering. Thus, a few words about the test should be an essential part of all QSO's for the next six months. Tell everybody about it—tell the J's, the G's, and, in fact, every ham you work.

Besides the sumptuous awards listed here, the winning station in each division will be awarded one of the attractive Centenary contest certificates. For the SWL we have to offer a handsome Cup as first prize and certificates as in the case of the transmitting contest. There will be plenty of awards left for the rest of the world! Special certificates, that can be proudly hung up for the next 100 years, will be offered to all Countries.

Again, we are making the contest attractive to all by awarding, through the courtesy of the Editors of Amateur Radio, another prize for the world's best station description, which is to accompany each entry. More about that later, too.

The most important item to be explained now is the serial number business. It's the same as that used in the W contest, but in case any ham is not familiar with that test and its operations we are rehashing the details.

Each competing station allots himself three figures, anything between 111 and 999. He retains these throughout the contest. He must exchange a six figure serial number each QSO; so for the first contact he adds three naughts, making his number, say, 367,000. This is given to the station worked and one is received in exchange. Now, the second three figures from here on are taken from the first three of the serial number last received, and are added onto the station's own three figured number. For example, VK5FM has assigned

himself 281 and has passed 281,000 onto his first DX QSO. He received from that station 457, 878 in exchange. His next number will now be 281,457 and so on throughout the test, adding the first three figures received to his own three after each contact. Stations at both ends do this and is proof of a QSO. Both the "in" and "out" serial numbers are entered in the log.

Naturally, distant stations will be most sought after to get those few extra points for each 1000 miles, but what a system can be worked out! ZL'ers all day and DX all night! There is nothing strenuous about this test because fatigue is spread over four week-ends!

"Amateur Radio" will be publishing further details each month, so look for them.

MELBOURNE CENTENARY INTERNATIONAL DX CONTEST.

Rules and Conditions.

1. There shall be two contests:—(a) Transmitting; (b) Receiving.

2. The Wireless Institute of Australia Centenary Contest Committee's ruling will be binding in case of any dispute.

3. The nature of the Contest requires the world to work Australia.

4. The Contest is to be held from 0001 G.M.T., Saturday, October 6, till Sunday, October 7, 1934, at 2359 G.M.T., and will be continued over the four week-ends in October at the times stated above on each occasion. The dates of the other week-ends are: October 13-14, October 20-21, and October 27-28, 1934.

5. The Contest is open to all licensed transmiting amateurs and receiving stations in any part of the world. Unlicensed ship and expedition stations are not permitted to enter the Contest. Financial members of the W.I.A. and its affiliated societies only will be eligible for an award in V.K.

6. Only one licensed operator is permitted to operate any one station under the owners call-sign. Should two or more operators operate any particular station, each will be considered a competitor and must enter under his own call-sign and submit, in his log, the contacts established by him. This debars persons from entering who have not a ham licence.

7. Each entry must be signed by each competitor as a declaration of the above statement.

8. Each participant will assign himself a serial number of three figures as detailed in the contest description. When two or more operators work the one station each of them will allot himself a separate number.

9. All amateur frequency bands may be used.

10. Only one contact with a specific station on each of the bands during each week-end will be permitted.

11. Contacts may be repeated on each of the succeeding week-ends with the same stations in accordance with Rule 10.

12. Each contact must be accompanied with an exchange of serial numbers and signal strength reports using the T QSA and R systems.

13. Scoring: One point will be scored by each contacting station for every 1000 miles between the Capital Cities of the States of the competing stations, measured by a Great Circle Line. The points claimed are to be entered on the entry form.

14. Australian Stations will multiply their total score by the number of Countries worked and the stations outside VK, by the number of Australian Districts contacted, there being 8 all told, viz., VK2, 3, 4, 5, 6, 7, 8 and 9.

15. No prior entry need be made for this contest but each contestant is to submit a log at the conclusion of the test showing: Date, Time (G.M.T.), band, station worked, in and out signal strength reports, in and out serial numbers, distance between stations, and the points claimed for each QSO.

16. Entries from VK stations must reach the Wireless Institute of Australia (Victorian Division), Kelvin Hall, Collins Place, Melbourne, Victoria, no later than 1st December, 1934. Foreign entries will be received up till 31st January, 1935.

17. The awards for all winning competitors will consist of a special attractive Melbourne Centenary Contest Certificate. The station returning the highest total in any Country will be entitled to an award, with the addition of similar special awards for the winners of each Dsitrict of U.S.A. and Canada, and each of the British Isles. There will be no World Winner in this contest.

18. A special prize will be given to

the grand winner in Australia, probably consisting of an 852 valve as the first prize. The contestant in each VK Division who returns the highest total for his District will also be awarded a Centenary Certificate. The official organ of the W.I.A. Amateur Radio will award a special trophy for the outstanding station description accompanying logs.

19. Foreign stations should call CQ VK "CENT," and Australian stations CQ DX "CENT."

Receiving Contest.

1. The rules for the receiving contest are the same as for the transmitting contest, but is open to members of any recognised Short Wave Listeners Society in the world. No transmitting station is allowed to compete in the receiving contest.

2. Only one operator is permitted to operate any one receiver.

3. The dates, scoring of points, and logging of stations once on each band per week-end are subject to the same rules for the transmitting contest.

4. To count for points, the call-sign of the station being called, and the strength and tone of the calling station together with the serial number and signal strength report sent by the calling station, must be entered in the log.

5. The above items must be filled in before points can be claimed, that is, it is not sufficient to log a station calling CQ or TEST. Verification of reception must be made in accordance with the conditions in Rules 4 above.

6. VK receiving stations cannot include VK transmitting calls in their logs, only foreign. Foreign stations will enter-up VK station heard only.

7. The awards in the transmitting and receiving contests will be similar. The winning VK receiving station will be awarded a Cup, providing he is a member of the W.I.A. or its affiliated societies.

8. Receiving logs are to be similar to the transmitting logs.

HARMONICS

VK3LH has an allocation on 2200 KC as a television wave. He would appreciate schedules and reports on his signals on this frequency.

A limited number of Centenary celebration stickers for QSL cards are available to Victorian members. Those desirous of obtaining them write immediately to the Secretary, Key Section, VK3PS.

Lack of space this month precluded a description of the Victorian key section versus phone section cricket match at Mt. Eliza. A thoroughly enjoyable day was had by all, and the phone boys finished up winners by nine runs, they say by sheer merit, but the key section assert the victory was only obtained after they had lent the "publicity" members several players.

A NOVEL ALARM.

During the recent BERU contest VK3GD was unfortunate enough to have the power cut off at about 1 a.m. Not knowing how long it would remain off he connected a buzzer across his C.O. bias supply and went to sleep. Immediately the power came on again he was awakened by this novel alarm.

RANDOM RAMBLINGS.
(By QRZ.)

VK3VU seems to have become note conscious. He was heard with PDC and fairly steady. Last time I heard him he was not only rough RAC, but was wobbling all over the place.

VK2YL still thinks that rough, unsteady note gets out best. Say, OM, you should hear the G's in the BERU contest, and think it over.

VK2NH a trifle rough OM. How about trying a bit of filter for a change. You'll be surprised.

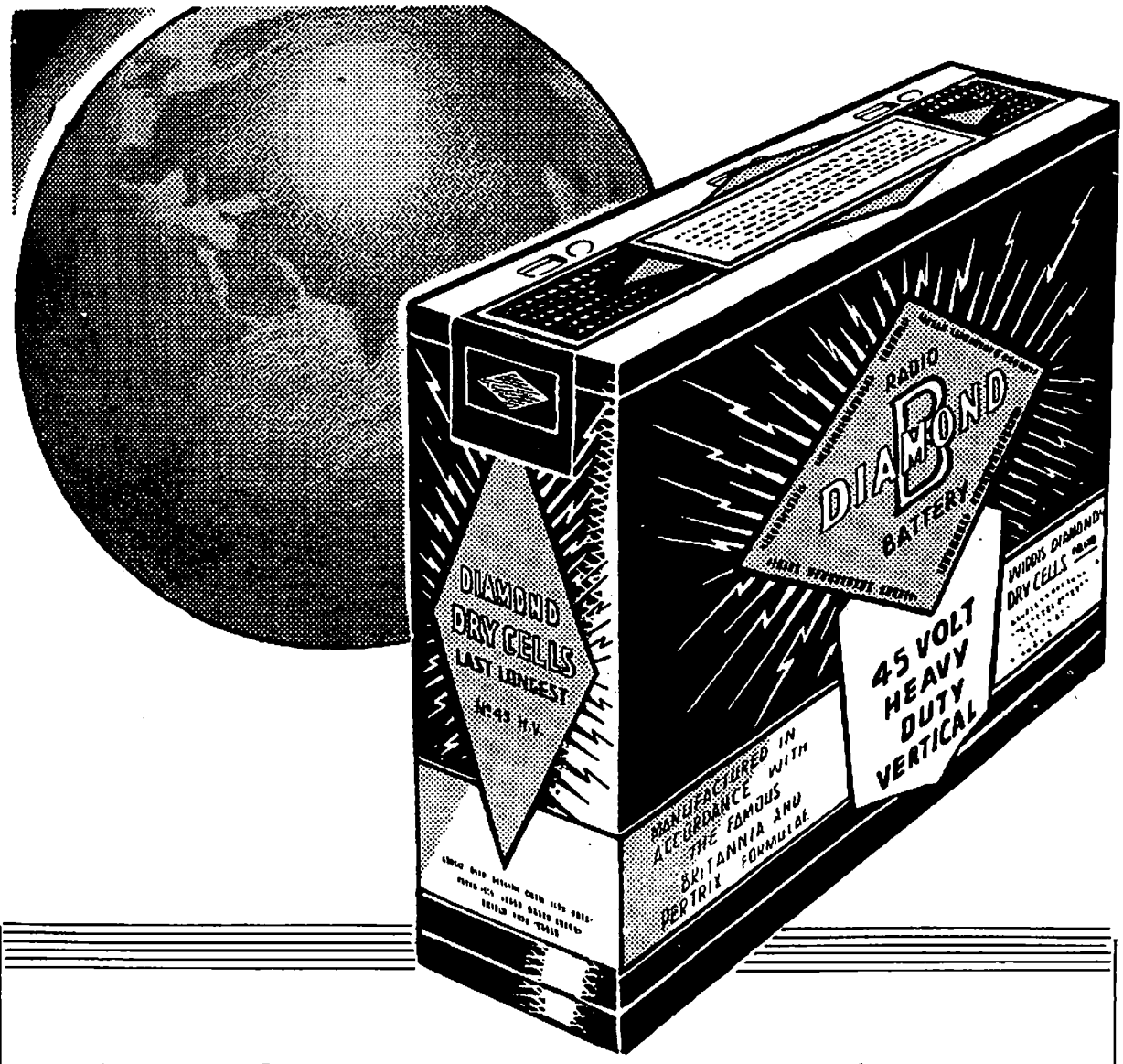
And now look what the fives have been doing.

VK5BC heard calling CQ. FB note but his call was 15, 14, 17 and 16 CQ's before signing. Of course, I didn't listen any more, so I don't know how many more followed.

Yes, after careful consideration, I think that was CQ you were trying to send VK5LG. Ever tried listening on a monitor? It improves sending.

VK5LD was heard during BERU contest with a terrible wobbly creation of RAC.

Now you'd think an old timer like VK5GR would have an up-to-date signal. Same old chirpy NDC to RAC note. Gets out pretty well though, so why worry if the chirps blot out some of the other fellow's DX!



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For Greater Power and Longer Service

VK5HB—Only a new chap and will soon learn that modern hams have good PDC signals. (If they are modern.)

Now why pick the CW men? Who would want to live over in VK5 with punk fones like 5MZ, 5KG, 5MK, and Co. on the air? No wonder we don't hear those good VK5 fones on much, that is 5DX, 5FM, 5WJ, 5LR, 5ZC, etc.

VK5BM—Another croweather who thinks RAC best.

VK6FL seems to think there's some advantage in chirps. I may be dense but I fail to see any.

ZL3AN was heard with one of those typical ZL RAC notes. Sounded almost like a VK.

VK2BK was heard with some sort of ripply note.

And VK2XM is another with a note that was ancient when the 11 year cycle was young.

There's probably a lot more, but I haven't time to listen.

73 & CUL.—QRZ.

Editor's Notes:—Please Mr. "QRZ," read the last paragraph of a letter by 2BP, under the heading of "QTC." Also, please drop me a line as I have a few ideas for you. I promise to keep your identity confidential and to myself only.—Ed., "A.R."

"QTC"

To the Editor.

Sir,—One hears on our high frequency bands a weird and wonderful conglomeration of "notes," "fists" and "procedure." This whirlpool of activity is, in the majority, centred on the 7 mc band, and on listening of an evening one is led to think of what this band must be like in the U.S.A., with their thousands of active hams. However, it may be interesting to look at our own country, where we find there were 1107 amateur licences in force in Australia on 31st December, 1933. Let us analyse these, and we find that VK2 has 419, VK3 has 320, VK4 has 137, VK5 has 117, VK6 has 76. VK7 has 34, and VK9 has 4.

These figures are on the increase, as shown for the six months, July to December (inclusive), 1933, when we find that 98 new licences were issued, distributed as follows:—VK2, 41; VK3, 17; VK4, 16; VK5, 13; VK6, 7: VK7, 4. The actual increase for the six months was 59, as the number of cancellations amounted to 39 during the same period. Since compiling these figures the January list has come to hand, on which we find a further 30 new calls listed, against four cancellations.

With this increase in numbers comes a decided swelling of poor notes, unstable signals, and decidedly bad operating procedure, though off frequency operation is of very low percentage. In connection with "bad procedure," this is perhaps the easiest fault of all to rectify, and it is up to some chaps (in cases, hams of long standing) to look to their operating procedure. It would fill the magazine to quote all the stations heard who seem to delight in filling the air with lengthy CQ's, adjustment of 'mitters whilst coupled to the antenna, etc.; but I will quote just one instance, perhaps the worst I have heard, when VK2FK called "cq" for eight minutes and twenty-five seconds, commencing at 11.50 a.m. on February 5, 1934. The cq's were broken up into groups of 28, 16, 21, 19 and 10. Such procedure is decidedly "crook," and all hams should try and stamp it out.

I noticed in "Amateur Radio" (W.I.A. VK3 Mag.), an article headed "Random Ramblings," which drew attention to some stations. Personally I think an article of simliar nature each month would be a decided asset, inasmuch as it would bring to note some of the "noises" which at present cause untold QRM.

Wishing this publication all the success it deserves, yours, etc.,

E. B. FERGUSON.

Railway parade,
Hazelbrook, N.S.W., 9/2/34.
VK2BP (A.R.A. Zone Officer),
District Commander, R.A.A.F.W.R.
N.S.W. Division.

INTERNATIONAL NEWS.

The well-known "Marathon Schedule Keeper," W2CC, has worked VK5HG 687 times: W9APY-9WR 525 times; and W6CXW and W9JO each 100 times. This is up to January 7. 1934. and in the case of VK5HG traffic for the Carnegie Institute has been handled.

VU7 is now the State Mysore in India.

Mr. Ayling, well known as AC1BD back in 1929, is now using VU2DX, and wishes to work all old VK friends.

VK3 SECTION NOTES

Key Section

(Conducted by L. T. Powers, VK3PS.)

In taking over the position as Secretary of this section, I feel sure I am in order by, firstly, thanking our former secretary, on behalf of the section, for the able way he carried out his duties and for the excellent notes he wrote for our magazine each month. I feel I have something to live up to. 3XR is now very QRL as secretary of the division, and we regret that he has not the time to be an executive of this section also.

In the contest line, advance details are published elsewhere about our Centenary Contest to be held in October. This is to be a wonderful chance for all DX fiends, and we want every ham in VK that can get a rig on the air to be in it. The details have already been sent to QST and T. & R. and this test is to have world publicity. While it is on, the whole world will be listening for VK calls and we expect a rush for W.A.C. certificates when it's over. Also the prizes will be well worth having, so start getting those rigs in order, particularly the receivers and be ready for a few heavy nights.

Sunday, 18th February, saw a gathering of the Key punchers, and cars at Alexandra Avenue, whence they sped to Mount Eliza and waited weary hours for the arrival of their challengers at cricket—the Fone gang. When the latter did arrive with only half a side, the order of the day was declared to be a bathe and lunch. The Fone gang then got lost looking for Davies Bay. After, the brasspounders transferred some of their team to make even sides, the Fone section said they won. After the game was over, all went beachward again with the feeling that all had had a good day.

Before our next issue appears, our Section Chairman—3UK will have joined the ranks of the married and the section stands behind me in wishing him all the best for the future. Incidentally, I hear that his YF will also be on the air with a call of her own.

In conclusion, I want to say that this job of writing notes was more or less sprung on me suddenly, and I haven't been able to collect any dope from the boys. After this I would like to get as much as possible from the members of the section, and that includes most country hams who, although they don't regularly attend meetings, are exponents of the key. For instance, when 3KR tried out his French on an F who promptly came back in solid French, Ken wondered what had hit him, or if someone hears 5MK sending CQ with a quavering note like a fervent prayer, just let me know about these little happenings and they will go in with your notes.

Cheerio, FER NW.

VK3 Phone Notes

The last meeting of the Phone Section was held on Tuesday, January 30. It was well attended, and, probably due to the fact that we had not met since November, everyone seemed particularly pleased to see one another. The gang had apparently spent their holidays (if any) quite successfully, either at home or at some place where one goes for the purpose.

Mr. Thompson also read to the meeting the letters sent to and received from the New Zealand DX Radio Association. They in N.Z. are very enthusiastic indeed about our proposed competition, and will undoubtedly give us all the assistance in their power to make the competition a success. The various clubs, DX-ers, etc., in N.Z. are to be zoned, and each will send along its individual report, which system would prevent any possibility of a station which may be a popular favourite receiving unfair marks.

Quite a lengthy discussion took place on the matter of power handicapping. There seemed to be an assortment of opinions on the subject, and up to date no real solution has been suggested, and it seems that they whose duty it will be to do the handicapping are going to have a very difficult task to perform. It would certainly be much simpler if every station utilised a final stage power of 25 watts and then concentrated on getting as high a modulation percentage and general efficiency as possible. If

that were the case, no handicaps would be necessary.

While on the subject of our competition, will all 200 MX fone stations please send in their applications for the forthcoming competition to the Secretary Phone Section as soon as possible? State power to be used, any technical details, and full particulars of transmitting gear to be used. Only finalists will be required to furnish sealed particulars of their proposed stunt, but this does not mean that you need not start to think up your stunts. Don't forget—we want applications from everybody.

Going from March to April—don't forget to tell your off-siders and second ops. that the new class for the Amateur Operator's Certificate of Proficiency commences in April, and will be limited to 30 members.

IMPORTANT.

3TH moved and 3KE seconded that all applications for wave length on the band 200 metres and over be accompanied by a crystal for the wave length that the station was operating on; all applications not accompanied by a crystal shall be ignored.—Carried unanimously.

As a final reminder, don't forget to bring along your crystals to the next meeting, gentlemen; in fact, to all future meetings.

IVOR MORGAN, 3DH.

COUNTRY NOTES

Western District.

3GQ has been using a 211 in the final stage, and did farily well in the Senior Section of the BERU test, although full power was not used during BCL hours and his score is not, therefore, as high as it might have been. He worked 37 G's during the test, best report being R8 from G20A. Frank sure gets a kick from his QRO, and now lights his cigarettes from the clothes line. Intends trying 56MC tests with 3NQ, but no report on results as yet.

3GY has been transferred from Camperdown to Footscray. His 200 metre transmissions will be missed by the locals. 3GC and 3NK, also of Camperdown, not heard lately but believed active. 3NQ is working DX on 20 metres, and trying new aerial system. The Geelong gang seem to put in most of their time on 200 metres, 3ZZ has joined the Navy, but still has time for QSO's during holidays. 3BW heard on the publicity band, and also on 20 and 40. Judging by the amount of DX heard calling him, 3KX is still as active as ever. 3LB is on the air again after his recent illness, and spends most of his time on Reserve work. Roy is contemplating exploring the Otway Ranges, accompanied by a portable rig. 3AL has returned from a trip to the Barrier Reef and is back on the job on Reserve work and 40 metres with a nice T9 signal. 3GM and 3ZL heard on very good fone, the latter still working DX. 3NZ, of Terang, has joined the fone gang on 80. The one-time active boys in Warrnambool are not heard much lately. 3DX puts out 200 metre fone, but his carrier is rather rough for high quality. 3GJ has been compelled to withdraw from Reserve work, but hopes to stage a comback when circumstances permit. 3PG, Casterton, heard occasionally chasing DX on 20—worked a new ham signing 3BR. Think he is a new ham in Briagolong. 3OW and 3HG confine their attention mainly to Reserve work, but work a little DX when in the humour. 3OW has installed a new power supply of the spark coil type, with a separate vibrator, and finds it FB for work at night when QRM from the engine and alternator raises further QRM with the family, hi. 3HG still experimenting with crystal lock, and would like to hear from anyone who has tried it.

The task of compiling the Western District notes has been entrusted to 3HG and 3OW, so drop a line to either or give them a call anytime. Cheerio and 73—3HG, 3OW.

Mallee and Northern.

Well, say what you like, but the country gang are stickers. Despite the QRM from every known brand of electrical device, to say nothing of the really fierce QRN during the past hot weather, it has been only necessary to switch on the receiver to hear some of them. In spite of the fact that 3500kc should be dead at this time of the year it appears to be the busiest band, especially during week-ends. 40 meteres is fairly active but 20 is very quiet. Several of the QSO's lately have been personal ones. 3WE went across to Swan Hill sports

and duly looked up the gang. 3ZK, Jim Stevens, is a no meter expert—how would some of you city chaps like to put a fone transmitter on the air without a single meter. 'Sfact, and not too bad, either. 3PY was also on a visit to Swan Hill, and 3ZK now boasts a 40 metre half-wave zepp with 40ft. feeders and his signals have gone up several points. 3KU was QRL with public address system at the sports, but we had a chin-wag about things in general. He is still on 200 metres, but hopes to try 80 during the winter.

3PY spent a few hours with the Birchip boys on his way home, and rumour hath it that he missed several small parts of his car when he eventually started for home. Paul also blames the Birchip beer for his lapse in returning another ham's QSL card instead of his own. (Wonder if that's the reason I've received so few lately, or are some hams merely forgetful). As stated above, most of the northern gang are heard pretty consistently. 3OR's sig. overrides all QRN here, and 3KR also wallops in when not QRL??? 3CE not heard much during last couple of weeks—must be building up that crystal rig. 3LH has been off 80 after getting out well on the harmonic of his 1185 KC xtal.

Cheerio—3WE.

COUNTRY FONE STATIONS.

200 MX Band.

All country VK3 stations operating on the 200-250 metre band will please observe the following instructions:—

(1) Immediate application must be made to the Radio Inspector, Treasury Buildings, Melbourne, for a renewal of permit to date from April 1, 1934 to June 30, 1934.

(2) Application for an allocation must be in the hands of the allocations officer (VK3TH, 93 Booran road, Caulfield, SE9), not later than March 14, 1934, otherwise it will not be considered in this quarterly issue.

(3) There are one or two channels vacant, and any member of the W.I.A. who desires to operate on this band is advised to make an application as in (1) and (2) separately, in the latter case giving full particulars of xmitter and power to be used; all stations on this band must be piezo-electric controlled (CC).

(4) It is most important that these instructions be strictly adhered to, as failure to apply will be accepted as an intimation that a frequency is not required.

G. F. Thompson,
Allocation Officer.

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

Secretary: Mr. R. H. W. Power, Wembley House, 841 George street, Sydney.

The council of the A.R.A. would, at this juncture, like to express their appreciation of the courtesy extended to their association by the Federal Convention just held, when it was decided to offer the A.R.A. affiliation with the Federal executive of the W.I.A. This step will without a doubt be welcomed by N.S.W. hams, who are now being asked to ballot upon the question in order to comply with constitutional requirements. When this affiliation has been constitutionally completed, it is felt that the action will result in the whole of the amateurs of the Commonwealth being once again welded into one solid body, a state of affairs that has not existed for many moons past.

Whilst in contemplation of this pleasant prospect, it would be as well for the hams throughout the Commonwealth to bear in mind that internal strife, whilst easily fomented, can be the cause of endless trouble and disunity, and that squabbles and disruptions, although easily brought about in the first instance, are usually the cause of splits and discontent, requiring years to patch up. Let us all, therefore, from now on, work together in harmony and agreement for the good of the cause and in the hopes that we shall see an end to the excessive amount of trouble that has occurred over the past few years.

Let us at all times be prepared to "cast out the beam which is in our own eyes before we look for the mote which is in our brother's eyes."

FRANCIS M. GOYEN,
President.
ROBERT H. W. POWER,
Secretary.

ZONE 1.

Well, gang, sorry I missed last month's notes, but QRL, as usual. Hi! But here we are again. Haven't been up on 80 mx, and only down on 20 for a short while. Have been on 40 mx a good deal, though.

2CP has been complaining of rotten condx down his way, and 4JF has been saying much the same thing. 4JF still using the ole Hartley. 2NH has a good DC sig, which is thrown forth from a PP TNT rig. 4GK has fb XPDC sig. The YL was on the key when QSO'd by 2PE. TNX 2BK, OM, fer that very fb QSP. Hpe cn agn an. 2YI still using Hartley, but is now QRO with 40 watts. Reckons DX is fb. 2ED using a TNT with 12 watts input. 2LP also using 12 watts. 3DC just put up a new aerial. What was it, OM, Wind? 4OB using Hartley with 15 watts to A245. 2OY using Hartley with a 210 DX. 3TD using a 2-stage xtal rig with a 59 as a tritet osc. Reckons he is going to rebuild, so will be off the air for about a week. 2QZ using a two-stage rig xtal with 10 watts. 28SQ using a PP 46 job with 30 wots! W7DVY using a four-stage xtal rig with 370 watts to 852. Oh! for Yankeeland! Hi! 2TH blew his RX rectifier when on QSO, so couldn't go over to receiver. K6EEI has ampo floating away from the clothesline. Dud, of 2DQ, is now a full-blown secretary. Fb, Dud, OC. 2DQ ripped his gear out and started to make a four-stage rig, but ran out of gear, so decided on three-stage. Hi! When it was tried out it had 50 watts input without the ant!!! He is now slowly rebuilding. 2HX now has a swell receiver—all A.C. job—58, 57, 56, and works like a charm. Believe 2AW has been building a MOPA. He and 2DQ are going to go 10 mx mad fer a while.

Well, gang, NM NW, so cu next month. 73 dx de.

JIM,
Zone 1, A.R.A.

ZONE 5.

Conditions during January and February have been very patchy on both 40 and 80 MX bands. QRN has been unbearable at times on the lower freq band, and 40 MX has been the parking place of most of the gang.

Comparing conditions on 40 MX with this time last year, one is struck by the great change in average conditions on all bands. One finds that, at the time of writing, it is very hard to QSO stations situated inside a radius of about 200 miles, whereas last year the locals boomed in on 40 MX. Interstate s.gs are very fair at all hours, the peak period being just before sundown.

VK5JK is consistently received here at good strength, and he is using only 3 watts. A portable using the call XVK2BP recently worked VK2, 3, 4 and 5, getting FB reports with under one watt input. The station was located at Katoomba. 4GK has FB YL op. only eleven years of age. Haven't heard Marj., of 3HQ, lately —saving up the energy for the next "five pointer"? Congrats on the result of the last, Marjorie, and don't forget "Shylock" in the next one. 2CK now has a new 'mitter built up in a rack. Geoff delights in blowing up 406's with a 1500 volt genny. Get a 211, OM. 2HO gets QRM from two-months-old second op. 6FO still going higher with the sky wire. Why not suspend it from a balloon? HI! 2NS very quiet of late; busy grinding xtals for the gang, Trev? 2BP still chasing up chaps who are members and potential members of the R.A.A.F.W.R. Where do you chaps hide out?

Well, think I'll go and call CQ for ten minutes and go to bed without turning on the RX. That seems to be the fashion these days. Cheerio!

Eric, 2BP.,
5th Zone Officer.

ZONE 6.

All the active members of this zone seem to stick to the 80 metre band, despite summer conditions. 2WH has discarded the batteries, and is now using a three-stage CC outfit, deriving power from an alternator driven from a 32 volt lighting plant. The quality of his fone is a little harsh, due to the use of a P.M.G. type mike. At the time of writing 2WH is visiting VIM. 2NM, who, by the way, is a radio service man, has been sadly neglecting his business lately, rebuilding his transmitter. He is now using 2A5's in push-pull modulation. Also transferred his rig to aluminium chassis. Is now troubled by a bad hum in the RF portion. The rig is CC using push-pull throughout 46's, 47's and 210's. The quality of the fone is better than when using class B modulation, though the hum is very bad.

2QA, as usual, has been making changes, the outfit now consisting of four stages, C643 CO, 112A buffer, PM256 and C606 in push-pull, class C, modulated by a pair of 45's, and a pair of 46's PP class B linear. The ant is AOG, 170 ft. long, end fed. (It works!) Have also been trying different receivers. Now using SG det es one. We extend our sympathy to all users of two-tubers. At present we are concentrating on supers; but so far have not been past the draughtsman, all our efforts being on paper. Testing here, we have found that the 46 tube makes a fb class B linear amplifier, following a low-power fone transmitter. Being primarily designed for class B operation, it naturally follows that the obvious thing to do is connect the two grids together, use no bias at all, and adjust the excitation until the input is normal, about 50 mils per tube. Using 400 volt power supply it is possible to obtain 20 watts from a single 46. Using two tubes in PP or parallel inputs up to 40 watts can be obtained, the operation being perfectly linear. Have also tried link coupling, and find it far superior to the usual capacatance coupling. Here we obta'n more than double the drive we had previously. Other chaps using it report equally gratifying results. It seems that the inclusion of an extra condenser and coil is more than made up for, especially on phone transmitters, where it is essential to have ample RF drive to obtain symmetrical modulation. [How about an article, 2QA, on this?—Ed. "A.R."]

As far as we know, there are no entries from Zone 6 in the B.E.R.U. test, so we won't have to worry about obtaining that much coveted trophy.

73 till next month.

JACK (2QA),
A.R.A. Zone Officer.

ZONE 7.

Owing to rebuilding operations, 2FI has been inactive during the past month, and very little information on conditions is available. The Temora gang report conditions very poor for DX. and QRN bad.

VK2KD succeeds in raising a fair amount of DX with a three-stage xtal rig using 47 CO. 46 FD, and 210 PA with an inout of 20 watts and a ½-wave Zepp on 40 metres. VK2FZ is using a similar rig to 2KD's, with the exception that a TCO4/10 is used in the PA, with an input of 50 watts. A 40-metre half-wave Zepp and four-tube A.C. receiver completes the outfit. Gordon completed WAC last month, but is waiting confirmation from three continents.

2JQ had the time of his life during the famous Moruya flood. He made arrangements with the post master to handle all telegraphic traffic and had VK2OF standing by; but they were not needed, as the landlines were put in order in time. 2JQ gets 25 watts into a CC transmitter, and finds it easier to work W's than VK2's. He is handicapped owing to the power supply not being on in the daytime and going off again at midnight. Two others of the 2UO gang, Doug. and Athol, have obtained their tickets, and are sitting for the April examination. VK2TZ is also in Wagga again, but inactive owing to a bad attack of YL'itis. VK2YI has again gone bush, and is down at Rand for a few weeks; but has no gear with him. Harry is now QRO with a 600 volt tranny, and since working a W6 he can't keep his hat on. VK2PN still gets on the air occasionally. Ross blew up his pair of 81 rectifiers, and is now going in for something bigger. VK2GT gets much more time for radio since he returned to Tumut, and he now has the backyard like a spider's web.

Well, that's all the news of the gang for this month, so "Cul," 73.

ATHOL.
A.R.A. Zone Officer.

ZONE 8.

VK2DN is now back from holidays, and is making up for lost time doing service work. It has Jack tied up a little, and he has not been able to devote much time to ham radio this year, but still manages to grind out some music on 200 metres. His second op. has shifted QRA to Wagga, and is now "dug in" at 2UO. Jack has just been sworn in as member of the R.A.A.F.W.R. Ivan, of 2EG, is trying to get used to his new QRA at Tallangatta, and is now VK3EG. All will be well when the gear arrives, so long as he can find a way to get the sigs "up and over" those hills.

Conditions here for the first week-end of B.E.R.U. contest were so bad that it was useless to participate. The QST idea of keying with 245's has been used at 2OJ for the past few months with good results. The usual practice, however, of CT keying has

been discarded, and the tubes are used in +HT to the buffer stage. The scheme has proved most effective, as keying is clean and BCL's never know when the station is on the air.

Cheerio to all, CU next month.

73's.

NOEL (VK2OJ),
A.R.A. Zone Officer.

NORTH SHORE ZONE.

It doesn't seem possible that 20 mx can become worse than it has been during the last month. 40 mx has been quiet in the evenings as far as DX is concerned, but after midnight and until the wee sma' hours conditions have been quite good. For local QSO conditions in the evenings on 40 are brightening up again. An occasional glance at 80 confirms the fact that there is not much doing up there. However, good old 2HU appears to answer every chance CQ in that region.

J2GX (who was J1DO) wants it announced that from 1st February all J1 calls will be changed over to J2, and that any persons signing J1 after that date will be unlicensed.

Had a QSO with 2HL on 80 fone recently. He is using a three-stage xtal up there, modulated with double choke Heising Reiss mike. He had a 5 metres RX in the shack, and, although he can hear chaps on the other side of the Harbour at R8/9, so far he hasn't been able to QSO. 2HL has had about 11 DX QSO during the month, including J, AC, and W. Hopes to put a couple of 50 watts in the final shortly. Roy, of 2HY, is disgusted with 20 mx. However, he's worked G, D, VQ4, on 40 in the very early morn. Roy says he heard some fb DX in B.E.R.U. test; but not so easy to QSO. 2HY is rebuilding to breadboard style shortly. 2KA hasn't been on very much, but has had some good European DX in the early morning on 40 mx. Paul's mod system is all A.C. 2KA had a portable DF rx at the Manly field day. 2JY is still another who is staging a comeback. He is building CC or EC rig. Found 20 mx NDG with his old outfit.

Chalk up another victory to the YL's. 2RD is getting married shortly, and from all accounts there will be no salvage for ham radio. Congratulations, Reg, OM, and may your married life be full of happiness. 2PP has been off the air for two years. Andy, of 2VR, has failed to get those 46's perking O.K. What's the next move, OM? Ian, of 2XC, is QRL Uni once more, but is thinking of rebuilding shortly. 2QK is an old-timer come to life again out at Manly. He's using a three-stage xtal with 46's in PP as the final. 2ZG expects to be on again shortly. Say, 2NP, OM, there are a lot of cards in the Bureau for you. 2ND has gone to VK4 for a month, and is on the air up there as 4ND. 2YC is still scattering his fragrance on 10 mx. Hope he migrates up to 40 soon. Some rag chews then, Jim! David Adams, from Wahroonga, appears to take the bun for the youngest A.O.P.C. holder—13 years old. Well done, OM, and I hope the R1 looks the other way and slips you a licence soon.

2YH, who is a country schoolmaster, was in Sydney for his holidays, and was present at the Manly field day. 2YA/2DR had a spill off 2DR's mobike after the last A.R.A. meeting. Back tyre blew out. 2YA is not so keen on mobikes now, and is thinking of purchasing a little car. 2QK, a new ham on the air, has worked WAC in a week, using three-stage xtal with 247 CO, 46 FD, 46's PP PA, 1 tube RX (hi) QRA Violet street, Manly. 2NG is still working Yanks and KA's. 2UP has at last purchased a meter (hi). Jim is planning a high power rig. Been using TNT on QRP. Tom, of 2KM, finds conditions NDG for DX at his QRA. Still has hopes of QSO-ing VK6. 2UG is still surfing, and busy with his aviary of birds. Heard sometimes on C.W. 2EL is now over in Manly, and comes in there with a wallop. Eric reports DX fb in Manly. Two A.O.P.C. candidates from Manly passed OK last exam. More QRM shortly.

Well, that's about QRU now, so once again I'll say 73 until next month.

DON (2DR),
A.R.A. Zone Officer.

Q.R.P. CLUB NOTES.

From the Roof of N.S.W., February, 1934.

Well, gang, here we are again, and this will be the last lot of notes from 2EZ, as I have resigned from the club. 2GT, George Bruce, of Capper Street, Tumut, is the new Secretary, and I sincerely hope that the gang will support him in every possible

way. The operator of 2EZ has returned to Sydney, city of beautiful surf beaches. T9YB, and 240 volts a.c., and hopes to be QRO soon. I trust that all the hams I have asked for monthly notes will forward same to 2GT as usual, so that the club can make a decent show in these notes. Now for some dope on the rest of the gang.

3CD rather inactive of late, but manages to get on for RAAFWR skeds, uses 8 or 9 watts input to a PM24B in a xtal. osc. rig. Hopes to be QRO soon with a 75 watt motor generator.

4NG with his portable rig now located on Tambourine mountain, and judging by the results obtained the location must be excellent. Expects to be located at Canungra soon, which is in a valley hemmed in by mountains 3800ft. high on either side. It will be interesting to see how his QRP sigs get out of this hole.

2XP not on much lately, but hopes to be shortly, when his new B batteries arrive. Guess the hand-generator idea a bit tiresome, Jeff.

2GH QSY his QRA to beach shack, and is now living the simple life and is QSO some nice jewfish, oysters or what have you!

3 JV has been rather QRL with the harvest, but is able to find time for RAAAFWR skeds. He has been using a 201A in xtal osc. circuit, but finds the output rather low, and intends building a PA for it.

Well, boys, hope you will forward your notes along to George. Cherrio, Gang, ex 73.

JACK 2EZ.

ZERO BEAT RADIO CLUB.

Secretary : E. Moginie.

Well, here we are at last; but don't blame us for not coming along before, as our publicity officer has been overworked (hi). Now we are here we take the opportunity of extending fraternal greetings to all hams, brother organisations, and the responsible officers for "Amateur Radio."

The club meets two nights a week, Tuesdays and Fridays. From 7.30 to 8.30 p.m. Morse classes are held, and from 8.30 to 10 p.m. lectures, debates, etc. Also from 7.30 to 8.30 p.m. each club night 2ZB is on the air for the purpose of Morse lessons and practice for our country and Interstate visitors. At the moment we are using TNT push-pull, a pair of PX4's with 240 DC from council's mains straight on to the job, but within the next month we will be on with a brand spanking new three-stage CC job.

All members are now busy brushing up their gear for the exhibition to be held on the 28th to 10th March in the Sydney Town Hall, whilst about a dozen are anxiously awaiting call signs. We had 10 out of 13 successful in the last A.O.P.C.

Noticed in February issue that 20Z hadn't QSL'd to PK3BQ. Well, we'll shake him up about it. All for now. 73 till next issue, and hope there's about two columns for us. (Hi!)

VK4 (QUEENSLAND DIVISION)

The monthly meeting was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, February 2, before a good attendance of transmitting and student members.

The resignation of Mr. E. Shorten, 4TS, owing to other business activities, was accepted with regret, and Mr. H. Angel was elected to take office until the annual meeting.

Congratulations were extended to the following students on their success at the recent A.O.P.C. exam.:—A. D. Macpherson, H. Lynch and Mr. Bremmerman.

Those participants in the M.P.W. portable contest are reminded that the last day of the test is the 25th March, and, finally, all logs must be returned to the secretary, Box 1524V, G.P.O., Brisbane, not later than the 9th April, and marked "Contest."

The following have been admitted as members of this division:—4EI, 4EL, 4FM, 4KA.

Federal Convention.—A report from the Federal Convention has been received, the results of which are very satisfactory, and we would like to extend our congratulations to Federal Headquarters and delegates concerned in their efforts.

The following stations were heard quite a lot during the first week-end of the B.E.R.U. test:—4RV, 4GK, 4BB, 4EL, 4UK, and 4WT, and all seemed to be getting a good number of contacts. It is hoped that scores will be available for next month's notes.

On Foundation Day 4RY, 4WT and two student members journeyed to Mount Gravatt with portable 56 MC receiver and 80 MX fone transmitter, and were successful in receiving 56 MC telephony from 4AW, of Nundah, at strength varying from R7-9, the distance being ten miles. A three-way Qso was worked between 4RY, 4GK and 4AW on 80, 40 and 5 MX respectively. The 5MX transmitter used at 4AW consisted of a 210 series Hartley, UX 250 Heising modulator and two 201A's as speech amplifiers, using the 40 MX antenna system. The plate voltage used was 300, and a reduction to 200 volts showed only a drop of one point in signal strength. Speech was still audible using 50 volts on the plate, and probably would have been better had the modulator bias been altered accordingly. Further tests are anticipated at an early date.

Cheerio till next month.

73

RY.

VK5 (SOUTH AUST.)

The first transmitters' section meeting for this year was held on the 24th January, and was presided over by 5WP before an approximate attendance of 20. We had two visitors, VK6KR and VK5JH.

5GR then spoke on the forthcoming B.E.R.U. contest, explaining all the rules. The way he and 5MU acted it seems that these two won't get any sleep during the contest.

5GR then read an article by W6HM from the "Australian Radio News." 5WP described his portable transmitter and receiver, which he intends using during his vacation down the Coorong. It is sure fb, and the whole lot is contained in an Airzone portable receiver cabinet. The transmitter uses a 171A in a Hartley circuit, and the receiver utilises a 32 detector and 33 audio.

5QR then gave us a description of his portable gear, which is even smaller than that of 5WP. It is a seven tube affair, and is contained in a 14 x 14 panel, and consists of a mopa with speech amp and modulator, and works on 20, 40 and 80 metres.

Our VK6 visitor then gave us an insight into conditions prevailing in Western Australia. He informs us that South African stations come in like locals, and are just as easy to work. Nevertheless, there are no VK6 stations W.A.C., South America being the "catch." The 14 MC band is practically useless over there at present. He also gave us the "low down" on the 95 ft. mast at VK6FO. They had quite a lot of fun getting this pole from a horizontal to a vertical position, HI! The darn thing, having a nasty habit of breaking and piercing the roof, caused quite a fair bit of damage. However, it is up now, and there is something like three gross of insulators in the nine sets of guys.

The VK6 boys are waiting on a two tube superhet. from VS6AH, using pentagrig tubes, and having the usual crystal filter, making it a true single sig super in two tubes! I think the VK6 boys are not the only ones who will be interested in this receiver.

After this interesting talk by VK6KR, 5WP put forward a suggestion to hold a picnic at Pt. Noarlunga on the 29th January. Everyone approved, so it was decided to leave the clubrooms for Pt. Noarlunga at 10 a.m.

The general meeting was held on 31st January.

Four new members were passed at this meeting. The distribution of QSL cards followed, after which 5RP and other members of the TDS gave a very interesting lecture on 56 MC work and equipment, which was thoroughly enjoyed by everybody. This lecture was followed by a practical demonstration. A three-tube super Regen receiver was used in conjunction with a PP 245 audio amplifier, and this combination filled the clubrooms with a special broadcast from 5RG.

After this programme was finished 5DA was tuned in, and duplex telephony was worked with him from the clubrooms by 5RP. The gear used by 5RP was a PP 171A oscillator, modulated, with a direct coupled 250 amplifier. A vote of thanks was moved by our new Federal president, 5FM, and was suitably responded to by everyone present. This lecture should show quite a few of our members that 56 MC isn't as "tough" as they think it is, and it should increase activity on this fine band.

5MW has not been heard for some time. 5MD is on 200 metre band, with excellent quality; uses a Hartley, with an E406 modulated with a direct coupled 250; only puts point 3

in antenna, but gets out very fb. 5MC now in Melbourne, and may start up there. 5MF has built two seven-tube supers, same as the National FB7; one has gone up to 5PK, and Al has the other one himself. I believe they are the "berries." 5MH will soon be on the air again on 200 and 40 metres, with telephony. 5MK is about the most active of the "M" gang, and is on the air almost continuously. 5LG spends about 95 per cent. of his life at the Gilberton swimming pool, the attraction being the YL's. and not the water. Be careful, Leith, HI! 5JU surprised everybody by attending the 31st Jan. meeting. 5GO may be going bush shortly. George is with the West Australia Airways, and his QRA is Parafield Aerodrome. 5JO was heard working a good deal of DX. Here's a new ham for chaps to keep an ear open for, VK5RF, Colin Howie, 1 Chapman street, New Mile End. Colin uses a Hartley with seven watts to a 245, and has worked a considerable number of Interstate stations.

73 VK5ML.

ANNUAL PICNIC.

The question of whether married men are superior at cricket to single ones was decided at the annual picnic of the VK5 division of the W.I.A on Sunday, 21st January. The picnic was held at Hawthorndene, a pretty spot in the Adelaide Hills, about 12 miles from the capital.

About 50 members, YL's and OW's, met in the city in the morning and went up in cars. It was a perfect South Aussie summer day—too perfect, in fact, because some of the chaps who had not become tanned went home looking like crayfish.

Married men batted first, 5YK and 5JO opening. These two stalwarts made the best partnership of the day, knocking up nearly 90 before YK was sent back to the shade of the gums with 34 to his credit. YK was like a cat though—nine lives! Hi! Hi! 5JO carried his bat nearly right through the innings for a magnificent 58, top scorer. F.B. O.M.

As regards to the rest of the match it had better be left to imagination. The scores tell their own tale. 5LF made the ump's arms tired waving wides at first but did quite a lot of damage among the married men later. (Welcome back to radio, Len. It's ages since the gang have seen you.) Several chaps returned from the wickets with their Christmas dinners under their arms. 5WP kept wickets well for the single men, while 5MU proved to be valuable in the outfield.

One or two potential champions were seen in action on the tennis court. Mr. and Mrs. 5RP kept the court busy, and 5BY, 5WP, 5MU and 5LF, also showed that they could handle a racquet as well as a cricket bat.

Scores in the cricket match were:—

Married, 195—A. Reimann (5JO) 58, A. Richardson (5YK) 34, G. Luxon (5RX) 0, S. Buckerfield (5DA) 24, D. Whitburn (5BY) 0, H. Bowman (5FM) 0, R. Bruce (5BJ) 10, R. Grett 6, M. Gray, snr., 4, H. Pitchford 6, J. McAlister n.o. 15; Sundries 38; total 195.

Single, 72—J. McGee 4, L. Deane (5LD) 9, W. Pitchford (5WP) 0, G. Ragless (5GR) 9, H. Osman (5RW) 10, Colin Howie (5RF) 1, L. Sawford (5LF) 0, G. Gray 10, Castle (5KL) 1, Eric Halliday 4, R. Gray 0, M. Gray (5MU) n.o. 4; sundries, 20; Total 72.

TRANSMITTING SECTION PICNIC.

The Transmitting Section of the VK5 Division, held a picnic on Monday, 29th January, at Port Noarlunga, about 30 miles from Adelaide.

There was a good roll up, includiny 3ML and 6KR, who were in Adelaide at the time for the Convention. Beach cricket and bathing were the main items of the day, and all who went said that they had a F.B. time.

Special thanks were due to 5FM, who took no less than ten down in his car. Guess the old 'bus must have grunted going up some of those hills, OM.

VK6 (WEST AUSTRALIA)

By "Prescription."

The general meeting for February was held at headquarters in the Amateur Sports Club's Building, King street, Perth, on Thursday, the 16th, and was presided over by 6AG, with 6JK as secretary and 6LK as assistant secretary.

Despite the muggy weather, a fair crowd rolled along, but on looking around it was found to consist for the

most part of the good old "stickers." It seems a pity that a greater number of the newer hams do not take an interest in general meetings, etc. However, it takes all kinds to make a world, including those people who take all possible and give nothing in return, so it seems hopeless for me to do more talking on this subject.

Business was commenced at 8 p.m., and continued until approximately 9.30 p.m., during which time much was discussed, including the reopening of WIA traffic channels to the Eastern States, and also a committee was formed to see what could be done to get 6WI on the air once again. This time the gear will probably be constructed in a portable form.

6KR, who had just returned from VK5, where he attended the conference as a delegate from this State, gave us an outline of all that had been done. I think that everyone present was of the opinion that he had carried through magnificently, and also realised the greater satisfaction of having a delegate present.

The meeting closed at 10.30 p.m.

After an absence of over eighteen months from the air, 6BN intends to make a lively comeback. He is building a portable split Colpitts. 6RL's CC rig has not been too much of a success to date. The last stage absolutely refuses to feed, and as much time is taken up in travelling 12 miles to and 12 miles from work each day, he says he intends to build a self-excited rig, just to be able to say that he has something on the air. 6MN has been chasing DX before the break of day. On three occasions he QSO'd absolutely nil on 40, so now 20 metres receives his patronage, with the result that G's and D's, etc., now hold no further interest for him. Syd. is, in my opinion, the most consistent VK6 heard. 6CP is very often heard on 40 with good CW, and, thinking of his "cobbers," he usually confines fone to daylight QSO's.

6FO has been doing great work in the B.E.R.U. contest, and has WBE time and time again. Someone whispered that he heard a South American on 20, and after many calls at five-minute intervals, had to enter ND in the log. 6RW is using an MOPA driven from 220 volt DC mains. He is often heard in Perth now on Sunday mornings, as "skip" seems to have lifted. 6KR did great work at the VK5 Convention for VK6, to the satisfaction of all. Reports still attempting to devise an antenna to reach VK5. 6CX seen more often with YL's than heard on the air. 6RA still QRP. It is reported that his fone has been mistaken for a power leak.

6GM has constructed a ribbon mike. He says that he has obtained good quality, even though the correct ribbon is unobtainable in VK6. YL's, etc., now receive more attention from 6LJ than does ham radio. 6SA in his few spare moments is building a new shack. Why? 6BB has been seen, but not heard, tearing around the river with portable gear on both the s.s. Emerald and the s.s. Perth. 6LK was situated on top of the "Daily News" building, also with portable gear, and was BB's receiving station. At present he is swotting hard for his telephony ticket, for which he is sitting in March. Good luck, Minor.

6AG expects to be too busy to be able to get on the air for about three months, but says he will make up for lost time when he comes back. 6FT seems to be unable to make up his mind whether to sit for a first class or telephony ticket next March. Best of luck, whichever it may be, Fred. 6MO and 6FL are down in Perth from Watheroo and Geraldton respectively for a few weeks. The latter has been hitting up some wonderful scores in country cricket.

VK7—TASMANIAN DIVISION

The monthly meeting was held at the new headquarters in Collins Street, Hobart, on Tuesday, 13th February, before a good attendance of members.

After the usual formalities arrangements for another field day were made, and it was decided to hold it on the 4th March.

Although the new rooms have just been obtained our new secretary had things in ship-shape order in the meeting room, which showed to good advantage the change over from the old rooms.

General activity on the bands this month has been a little better. The erratic behaviour of 40 MX is (no doubt the reason why 80 MX is becoming popular again despite the presence of bad QRN at times. Several rather good interstate fones can be

heard at good strength, and ZL's came in with a kick at times.

10 MX during the last three or four weeks has allowed some interstate contacts to be made. I will endeavour to give some idea of the CONDX here in VIH during the period. On 4th February 2XY with nice T8 signals was heard about 10 p.m. at R7/8; but by the time I had the transmitter perking on the band his signals had QSB to about R3/5, but managed to have a short QSO with him. 2XY was the only 10 MX sig. heard during the week-end of the 4th February. During the following week-end (11th February) the following signals were heard and contacted, 2XY, 2BX, 2NO. Strength varied from R8/2 and after 1 p.m. no signs of any stations could be heard at all. VK2's could be heard QSO with VK3, but, unfortunately, no VK3 signals were logged here. On the 11th a harmonic from 2ML working on one of the lower frequency bands was heard about R4/5. To-day's mail brings a report from VK3OF on 7NC's 10 MX, on 11th February, strength R8. I would very much like to QSO some more VK3's on this band. All States, with the exception of VK6, have been contacted here. On 18th February the only signal heard was that of 2XY QSO with 2NO, but QSB right out soon after he was last heard.

Here in VIM CONDX on ten MX seem best when the weather is hot and sultry. Well, OMS on next month, 73. VK7NC.

NORTH SUBURBAN RADIO CLUB (VK3FY)

At the last meeting of the above club a very interesting talk was given by Mr. Chris. Rainbow. 3JR, on "Auto Radios," which was enjoyed by a large gathering of members and visitors. JR's lecture was broadcast on 40 metres. We hope to broadcast all lectures for the benefit of all hams and BCL's who are not fortunate enough to be members of our "live wire" club.

At the close of the meeting the following were enlisted as members: —E. Gillitt, Carlton; Robt. Leeder and Robt. Richardson, Collingwood; Dan Havin, Carlton: and Jack Corcoran, North Richmond.

The meetings for March will be held on the 5th and 19th inst., at the clubrooms, 354 Rathdown street, North Carlton, to which all interested are invited.

A Morse class has commenced, and will be continued at 3FY's clubrooms every Monday evening, other than general meeting nights.

3OQ, one of 3FY's ops., has been very QRL with a brand new YL, so we expect the building of the new crystal rig will be abandoned. (FB, Ron, 'tis better to sit on a park seat till 1 a.m. than to be glued to a pair of cans chasing DX.) 3TY, our new president, is building a three-stage crystal rig, and is at present operating on the 40 metre band. 3FZ, the Sec., is contemplating a crystal rig in favour of the Hartley. Previously a single 210 has been used and worked DX with ease.

Crystal control has become so popular that I believe all the pirates are forming an "Anti-A.O.P.C. Union" to enforce the use of C.C. on all transmitters above a half-watt. What watt?

By the time these notes go to press our colleague, 3PA, will have taken the vows of matrimony, and the members of 3FY wish Percy and Mrs. PA the very best for their future happiness. Congrats, OM.

The secretary, Mr. F. Maher, 3FZ, 102 McKean street, North Fitzroy, will be pleased to acknowledge all inquiries concerning club activities.—Wm. Wonder, publicity officer.

VICTORIAN QSL BUREAU

Cards are on hand at the Victorian Qsl Bureau, 23 Landale street, Box Hill, for the undermentioned stations: —3BC, BP, BX, CA, CT, DY, ER, FB, FC, FM, GA, GU, GX, JL, JW, JX, JY, LM, LP, MH, MX, NC, NR, NT, OP, OX, OZ, PK, RN, RW, SK, UJ, VU, WB, WK, WP, WX, XK, XQ, YL, YR, ZY, ZF. The above cards will be forwarded to the owners on receipt of a stamped envelope.

In this month's mail was a letter reading:—"QSL Manager, I have before me a copy of the January 'Amateur Radio,' and notice therein a list of cards on hand. I have heard all the stations mentioned on several occasions. Kindly forward me a card from each of the stations mentioned."

The new address of the J.A.R.L. is P.O. Box 377, Tokyo, Japan.

FB8VX is located in Madagascar.

A nice card of truly national design and of good appearance is that of VK3SB.

W5IA, of Fort Worth, Texas, U.S.A., writes soliciting 3.5 MC skeds with VK. W5IA has heard VK on this frequency on numerous occasions during the past year. Any VK desirous of establishing and maintaining a schedule please write this Bureau for full particulars.

R. E. JONES, VK3RJ,
Qsl Manager.

1934 CONVENTION

Adelaide was chosen as the meeting ground for the Federal Council this year, and February the 27th saw the opening of the Tenth Annual Federal Convention.

Only two Divisions sent delegates over, and the remainder were represented by proxies. Victoria chose Mr. Cunningham, VK3ML, as their representative, and Western Australia Mr. Bell, VK6KR. It was very pleasant to have Mr. Bell at the Convention, because his Division has not been directly represented since 1925.

The members of the Federal Executive present were:—Mr. R. B. Caldwell, Federal President; Mr. R. D. Elliott, Federal Vice-president; Mr. G. B. Ragless, Federal Publicity Officer; Mr. H. N. Bowman, Federal Traffic Manager; and Mr. E. A. Barbier, Federal Secretary. The following proxies were appointed:—Mr. G. B. Ragless, for Tasmania; Mr. L. Deane, for Queensland; and Mr. O. J. R. Richardson represented South Australia.

At 8 p.m. on the 27th the Federal President welcomed the representatives from the other States and declared the meeting open. Altogether there were 20 items listed on the agenda for discussion, but only a few appeared to be of major importance. Those of minor value dealt with matters pertaining to amateur operating generally and A.O.P. certificates. Although these have been brought up at previous Conventions, they were fully discussed, and definite action was directed. However, space does not permit us to publish anything but the contentious or important items.

The first, and perhaps the most outstanding, item was the affiliation of the Association of Radio Amateurs (N.S.W.) with the W.I.A. It was moved by Mr. Cunningham (Vic.) and seconded by Mr. Ragless (Tas.) "That the affiliation of the Association of Radio Amateurs of N.S.W. with the Wireless Institute of Australia be accepted." Carried unanimously. Mr. Cunningham further moved "That the A.R.A. be accepted as the official representative of the W.I.A. in N.S.W.," which was seconded by Mr. Ragless and carried unanimously.

Item 6 dealt with commercial interference on the amateur bands. It was realised that this Institute was powerless to deal with such a matter direct, but it was decided to offer our support to the I.A.R.U. again as a help to fight the case. This was done by the following motion, moved by Mr. Cunningham (Vic.), and seconded by Mr. Deane (Qld.)—"That the Secretary write to all affiliated organisations of the I.A.R.U., and that the matter be again brought before the P.M.G. Department." Carried unanimously.

"That the location of Federal Headquarters remains in South Australia" was carried on the motion of Mr. Cunningham (Vic.), seconded by Mr. Deane (Qld.).

No. 7 item was of great importance, and on the motion of Mr. Cunningham (Vic.), seconded by Mr. Deane (Qld.), it was resolved—"That the P.M.G. Department be approached to standardise the A.O.P.C. papers in all States."

"That the official organ of the W.I.A. continue to be the 'Amateur Radio' until next Convention." was moved by Mr. Deane (Qld.) and seconded by Mr. Ragless (Tas.). An amendment, moved by Mr. Cunningham (Vic.) and seconded by Mr. Richardson (S.A.), "That the words 'until the next Convention' be deleted from the motion," was put and carried, with Mr. Ragless (Tas.) dissenting. Mr. Deane (Qld.) did not vote.

The old question of phone on 40 metres was again brought up, and it was moved by Mr. Cunningham (Vic.), with Mr. Deane (Qld.) seconding, "That each State endeavour to suppress and control music on 40 metres after dark." Carried unanimously.

Moved by Mr. Ragless (Tas.) and seconded by Mr. Deane (Qld.)—"That each Division of the W.I.A. be asked to take steps to suppress A.C. signals in their respective Divisions." Carried unanimously.

On the motion of Mr. Bell (W.A.), supported by Mr. Ragless (Tas.), it was resolved "That the P.M.G. be asked to consider the reduction of experimental licence fees."

Per capita payments (item No. 17) were dealt with and discussed at length. On the motion of Mr. Deane (Qld.), seconded by Mr. Ragless (Tas.), it was resolved—"That a flat rate of 10 per cent. be levied on all Divisions and affiliated Societies from the amount of subscriptions received, excluding the amount of the Official Organ subscription."

Following this, Mr. Bell (W.A.) moved and Mr. Deane (Qld.) seconded —"That the Federal Executive should submit a detailed and audited account of receipts and expenditure of per capita payments to each Division within one month before each annual Convention." Carried unanimously.

A proposed new constitution was brought before the Convention and was thoroughly gone into. It was realised that it would be impossible to accept such a constitution for all Divisions, owing to differing state of affairs. However, it was decided, after amending it roughly at the Convention, to submit it to each Division for consideration. It is hoped that a standard constitution can be brought into effect and adopted, as closely as possible, by all Divisions, thereby increasing our strength as a Federally united body.

An election of officers for the ensuing year was then held, with the following appointments:—

Federal President and Federal Traffic Manager : Mr. H. N. Bowman.

Federal Vice-president : Mr. R. D. Elliott.

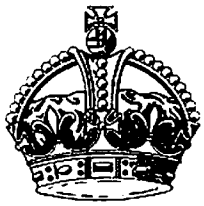
Federal Publicity Officer : Mr. G. B. Ragless.

Federal Secretary : Mr. E. A. Barbier.

The Fisk trophy was then presented by the retiring President (Mr. R. B. Caldwell) to the winning State's representative, Mr. R. H. Cunningham (Vic.). The visiting delegates from W.A. and Vic. expressed appreciation for the welcome they had been given and thanked Messrs. Elliott and Bowman for their hospitality.

Thus ended the Tenth Convention.

R.A.A.F. Wireless Reserve Notes



VMC

Total No. of Messages **1183**

Average per Station **76**

VMC4

Total No. of Messages **726**

Average per Station **121**

3D6

Total No. of Messages **207**

Federal Notes by the C.O.

By the time these notes are in print March the 1st will be on us. This is the date that has been put aside for the commencement of Reserve training in all districts. All orders and instructions will take effect from this date and could be marked down in the history of the Reserve as being the beginning of the training of what is going to develop into a strong and well organised unit. During the past month many new stations were officially enrolled and the ground work of stationery supply issue, etc., has been covered. So now there only remains the training and the brighter sides of the organisations to commence. Perhaps it would seem that I have made "training" a dull and monotonous pastime. It is certainly not meant that way, be-

cause behind message handling and exercises there is always experienced a thrill that seems to be missing in the amateur game. To become A1 operators seems to be the ambition of every member to-day. One has only to look at the traffic returns, they speak for themselves. Then, again, it is understood that VMC members are even at it from 6 a.m. in the morning. The best example of enthusiasm is to be found in VMG, where, with only five active members so far, they can return a total of 52 messages per head a month. It is impossible to describe the feeling that exists between Reserve members. We have never experienced anything similar before. Hams may come, and hams may go, after they have worked all that their hearts desire. After that there is little left in the game; but in the Reserve, where there is a definite organisation, the members are always finding something new about it. There is a "kick" a day, so to speak.

March the 1st will certainly start a unit in operation that will change the amateur's outlook completely. There will be something for him to follow on with and keep on the air. But, first let him contact all the DX he desires, and after that he is welcome to a brotherhood that is stronger than the Service itself. I am not saying all this just to fill up space, but it's because I am looking far ahead where I can see the Reserve with not a mere 200 or so members, but with every ham with a spark of love for duty and his Country signed up. Can you describe the thrill you got out of handling your first message? Did you turn the opportunity down? No, of course not. You got the same kick out of that as you did when you contacted your first DX station. You felt that you would shift heaven and earth to get a 100 per cent. copy.

That's, in a nut shell, the feeling that the Reservist experiences, not just the once, but at all times. There is a rhythm behind message handling; a desire to hand-over dozens of messages one after the other. I am not talking "hooey" either—just glance at the traffic awards this month and last month. It proves itself. I am not asking you to join the Reserve, I am just playing fair to all hams outside the organisation by telling them what is there for them; it cannot be repeated every month. The Reserve is a unit of honour, and you could never find such esprit-de-corps or such enthusiasm to serve in any other fraternity in the world.

There is plenty of room for the willing ham in the Reserve and applications may be made through the appropriate District Commander, whose amateur call is given at the top of each District notes.

We have two new District Commanders to take over command of training in two very promising States. VK2BP is now getting N.S.W. into its old stride of years ago, and VK5SU is going to carry on the work where VK5MB had to leave off. Both these districts are starting off afresh and it remains to be seen which District Commander can do the best job! Hundreds of log books, message pads, and lapel badges, have been issued this month and this is where I sit at case and watch, with great hopes, the progress of each district, for it is for the members and their District Commanders to make their district a success now. PHC.

SECOND DISTRICT NOTES.

(By 2Z1-VK2BP.)

Activity will have commenced here by the time these notes are printed and three of four sections will be well under way. Applications are continuing to roll in, and VMB will soon be well represented all over the State.

The organisation of sections has been a rather difficult proposition with us, because of the vast area to be covered, and frequency problems are to be overcome. However, with carefully balanced sections there should be no difficulty in maintaing 100 per cent. communication.

It is not possible to write personal notes at this stage, because the members have not settled down yet, but next month you'll hear all about our doings. We will be putting over the snappiest traffic you have ever heard!

THIRD DISTRICT NOTES.

(By 3ZI-VK3UK.)

With the deletion of 3A1, 3A2 and 3A6 from our active ranks, reported last month, VMC1 has been very much disorganised. But it is hoped that this section will be fully strengthed again within the next few weeks. There have been seven new

enlistments this month and from these new stations the vacancies will be filled.

The main item of news this month was the announcement of the Ramsay Trophy winner for 1933-4, and we want to add our congratulations to 3C6 for his very fine performance in winning this magnificient cup. Anyone who has not copied a long message, in which the words have been purposely misspelt, can have any idea how difficult it is to write a copperplate copy and the fact that 3C6's return was nearly flawless speaks highly for his copying skill.

3D1 paid a flying visit, of about, three hours, to the city about the middle of the month, and a few hazy points of procedure were gone over. 3A4 has just returned from one of the pleasure cruises and will now have the "pleasure" of trying to recover some lost sleep! 3D4 will be leaving about the middle of next month, on the Java cruise, and Bruce Mann has just left for the Solomon Islands. These cruises seem to be very popular with the boys at present, but apparently only the country members have the money to go during these hard times! !

Schedules are proceeding as usual. (the only disruption this month being due to the W.I.A. cricket match, described elsewhere in this issue.) The whole city membership, with the exception of 3C6 were "off duty" on this day. 3Z1 has moved from the old QRA and his transmitter is dismantled at present. He has been operating each Sunday either from 1A1 or 3Z2, and the latter station has been collecting the mid-week traffic from all sections. 3B6 has been transferred to the country and will be leaving his QRA in South Melbourne about the beginning of March. We understand he will be going to Warragul, but do not yet know if he will be there long enough to set up his gear. The city will be losing one of its best stations and we hope that he will soon be back in Melbourne again. Both 3B3 and 3C3 are expected down here within the next few weeks, and we hope to have the opportunity of seeing a great deal of them during their stay. Having our country members down to town fairly frequently gives us many opportunities to discuss knotty points, and also to make future plans, which will be most suitable to conditions all over the State. We are hoping to run a DX contest amongst the VMC members within the next few weeks, and are preparing rules, etc., now, so as to make the contest fair to all stations using all types of gear. As the DX season is fast leaving, it will have to be within the next few weeks or there will be no DX left to work, with the sole exception, perhaps, of the W's.

FOURTH DISTRICT NOTES.

By 4Z1-VK4AW.

Training in VMD has commenced 28th January with two weekly watches. In order to provide maximum coverage and times to suit as many members as possible the watches are held each Sunday at 1000 hours 6555 kcs., and at 1900 hours 4155 kcs., with instructional broadcasts at 1030 and 1930 in each case.

Several present members have been keeping watches, although the percentage is rather low. If for any reason 4Z1 is not heard at readable strength by all VMD members, they are asked to advise immediately, so that arrangements can be made without delay for a more suitable frequency channel and time that will provide a reliable contact.

At the present moment 4155 kcs. is troubled by static, which is particularly bad in NQ, but should prove its worth by next month as winter approaches.

Traffic totals this month are rather poor, due in three cases to clashing with activities in the B.E.R.U. contest, but we hope, with the aid of those, to provide a larger total for next report.

Traffic Totals.

4A3, 1; 4A4, 3; 4JM, 1.

FIFTH DISTRICT NOTES.

(By 5Z1-VK5SU.)

We are looking forward to the 1st March, when we will be able to put our sections into operation and get our show going. At present we have the majority of the best operators in the State signed up, who are anxious to hop into R.A.A.F. procedure. Watches are being maintained weekly with 1A1 for reception of the latest news and instructions. It is our ambition to get every country station a member of the Reserve, and many have signified their intention of applying for enrolment. Unfortunately, the organisation has taken up much

time lately and it has not been possible to get hold of the personal notes. However, next month you'll see something different!

SIXTH DISTRICT NOTES.

(By 6Z1-VK6MN.)

Since our last notes appeared in these columns, a meeting has been held at 6Z1's shack, and in spite of the short notice given only three were A.W.L. The evening was passed discussing procedure, and VK6RA expressed a desire for an application form to join up. Welcome to the Reserve Bob, OM.

A new comer to hamdom is OM Spencer; just got his ticket and is awaiting call letters. He passes the time of day under the wing of W.A. Airways, and is awaiting an application form to join the Reserve. To him a welcome is also extended. When he gets going the roll call around VIP will have six members, who are active and enthusiastic.

The boys are waiting their call-signs and their arrival will add to the proceedings muchly. 6LK turns up like clock-work to practice, and is shaping well. 6LJ is enjoying another burst of enthusiasm, and although studying for a commercial ticket, keeping his cricket up, and pacifying a YL, keeps his fine fist from getting rusty on Sunday mornings at roll call. 6RA has taken to Reserve procedure like a duck to water. 6FO has been busy chasing BERU points and lost count of the number of times he WBED. Conditions are bad for country contacts at present. No word from 6BO, FL or FM lately. 6RW is awaiting application form, and works a MOPA off 220 volts D.C. mains with some good results. It's a problem to get the Reservists in the country into training, but 3.5 MC may help us out in the winter.

SEVENTH DISTRICT NOTES.

(By 7Z1-VK7RC.)

Congratulations to VMC on the very fine score in the first awards for traffic handling. Guess there must be a host of keen members over there!

We have now allotted official calls to enrolled members. but there are a few more to come. Those active now include 7A1. 7A2, 7A3, 7B1, VK7LZ and 7Z1. We are awaiting the register of members so that we know who 3C3 is when we read "3C3 has come to town!" It's hard to get used to R.A.A.F. calls! 7A2 thinks that the weekly B/C's are welcome pieces of news that let members know exactly what is doing. All the boys here are looking out for the procedure and other B/C's from headquarters before going on with the training. Plenty of exercises are going over and we are proud of our efforts in traffic handling. It certainly helps the procedure. 7A1 and 7A2 have been keeping regular schedules for traffic handling. The former has rebuilt his transmitter from T.N.T. to Hartley and finds it works much better. 7A2 is waiting a frequency before installing crystal. 7A1 has just completed a new frequency meter and has sent away for a decent dial. He has been doing some early morning work with 7A2 using a portable TPTG rig. 7LZ missed again this month with his report, but is now using a MOPA and has a slight back wave. Nevertheless, the signal is steady. It is rumoured that 7A3 is likely to be leaving us shortly, but nothing definite yet. We would be sorry to lose him.

7Z1 is now using the 3ML transmitter, using a 59 as CO and TBO/4 10 as PA, on all frequencies. EC oscillator is used on R.A.A.F. frequencies by merely taking out the crystal and putting a condenser in its place. The note has now gone from T1-T9!

Heard that 7LZ and 7A2 discovered a pirate in Launceston, but 7A1 said that it was just a back wave from 7LZ! Had you two been to a "ham-feast"? Suggestions in regards awarding our trophy have been slow in coming forth. How about it?

Traffic Totals for February.

7A1. 59. 7A2, 73. 7A3, 41. 7Z1, 46. 7LZ, 36. Total per head, 51.2.

ARE YOU A MEMBER?

Subscriptions to the W.I.A. (Victorian Division) are as under:—

Full Member	20/
Associate Member	16/
Country—	
Full Member	14/6
Associate Member ..	10/6
Student Member	7/6

Entrance fee, 2/6.

HAMADS

Payment in Advance.

Rates.—To Members of W.I.A. and Affiliated Bodies, 2d. per line or part. Non-members, 4d. per line or part.

QSL CARDS, printed by a HAM. Be sure of a good job. One colour, 250 8/6, 500 12/6; two colours, 250 11/, 500 16/.—3RF, 42 Orrong cres., Caulfield.

Rush your order for QSL CARDS to A. R. Cook, Printer, Mordialloc, S.12 (Vic.).

Esco Motor.—Gen. ½ h.p. Universal Motor, driving 600 v. 250 mil. gen., also Kellogg Double Britton Mike, cheap.—Write 3RI.

FOR SALE.—4-tube S.G. Short Wave Receiver in aluminium cabinet, 3-stage xtal controlled transmitter, 2000 volt C.T. high-tension transformer, 350 volt power supply, and four 1 mfd blocks Faradon 1750 DC working voltage filter condensers.—Apply Jack Anderson, VK3JA, 100 Foster street, Warrnambool.

HAMADS

WANTED.—May and October QST, 1931. Any reasonable price paid, or other issues given in exchange.—VK3RJ.

BRAND NEW TAYLOR 203A's and 845's, £5/10/ net each.—VK3BJ, 161 Napier street, Essendon, W.5.

One Ribbon Mike., Permanent Magnet type, Exc. Freq. Response, well finished, together with Special Ferranti Matching Transformer, highly sensitive if used with 3-stage amp. Will swap for 50-watter in good order, or what have you? Also Ferranti P.P. Input, 1-2 output Tranny and three sets of Ferranti Cores, Bobbins and Cases. Will take any reasonable offer for the lot.—Address, P. Watson, VK3PY, Box 49, Warracknabeal P.O.

80-metre Xtals, 10/ each, any part of the band. Call or write VK3UH, 517 Lower Malvern road, Glen Iris, S.E.6, Victoria.

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AMATEUR RADIO

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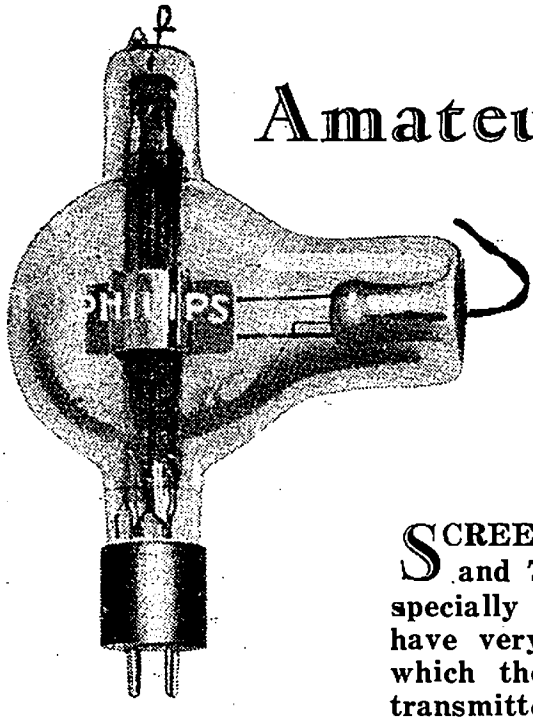
Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

Screen Grid Valves
For
Amateur Transmitters



¼ of actual size.

Types:
QB 2/75, QC 05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A. Type.	Screen Grid Valves. QC 05/15.	QB 2/75
Filament voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam of bulb	50	100
Max. length	160	210

*Approximate values.

PHILIPS

TRANSMITTING VALVES

EDITORIAL

Does it ever occur to you, Brother Ham, what excellent work is being done by the various office-bearers in your own local section of the W.I.A. or other Ham organisation? No matter whether any particular person does things which do not exactly fit in with your own ideas, rest assured he is doing those in a conscientious manner, having in mind the while the welfare of the organisation which he represents.

Life is too short to take too much note of the many kicks which we all have coming to us, and it therefore behoves each and every one of us to do our very best to pull our weight, as it were, with the rest of the team, whose job it is to see that the progress of the club or what have you is not standing still.

As an introduction, perhaps the above remarks have left you up in the air.

Let us be more to the point.

"Amateur Radio" tells you on its front cover that it is published in the interests of such by the Wireless Institute of Australia (Victorian Division). Does it not strike you forcibly that that body must be most progressive and courageous in its policy to publish a 100 per cent. Ham magazine where others similar have failed?

But we digress in our enthusiasm. However, we have painted a picture of what organisation can do.

In Victoria (VK3) election time for the W.I.A. draws near. It is your responsibility to cast about for even better executive than you have to-day. You may say that if we have such a good council to have courage enough to start a magazine and see that job is carried out correctly, why make a change? You must confess such a statement would be retrogressive, inasmuch as we feel you will admit "standing still is going back."

Now, here's the rub. Cast your eyes about you, talk to your member friends, and make some suggestions as to who you consider should hold office after the coming elections in June. You may think that June is a far distant date, but there is no time like the present time, and it is never too early to discuss this very important matter. We urge you to use your franchise intelligently.

Incidentally, this magazine holds no party views except that of the progression and well-being of the Australian Radio Amateur.

While the powers that be are looking after the many and several details that go to make your organisation a success, you can be quietly doing your job of work, and that is to get a new member for the W.I.A. Get your prospect, work on him, sell him the many benefits of membership, depending on circumstance. Perhaps it may be wise in some cases to let that sink in for awhile. Later persistency will nearly always break down the resistance of your prospective member, so be patient and tactful.

We venture to say that once you have brought in a new member you will have the satisfaction of having done something in return for the work done by those in other responsible positions; a satisfaction that must be felt personally before being appreciated.

Do not be afraid to criticise those who are in executive positions. In doing so, do not follow the line of least resistance and use the usual destructive methods. On the contrary, if you criticise, do so in a constructive manner. It will be appreciated by any conscientious member of your council, and, further, in expressing your ideas you are giving exercise to your brain in that you are making yourself a potential contender for a seat on council at some future date. Executive understudies are always at a premium, and the W.I.A. is no exception.

There is an old saying that "Nobody cannot be done without." Think it over. While your present executive and others are doing good work behind the scenes, nobody will be more pleased than they to see a real contest for the various seats when they become vacant in June next.

In the meantime do your job "behind the scenes," whether it be the introduction of a new member or any other job, provided it is for the benefit of your institute and for the well-being of the Radio Amateurs of Australia.

K.

56 MC

Transmitters and Receivers

By Syd. Maguire, VK2XY.

Owing to the tremendous interest being taken in 5 metre work, I have decided to try and give in a simple manner a practical article on the infant band of the hams, 56 MC.

Firstly, the receiver.

Owing to the frequency, CW on 5 MX introduces many complications, so we will deal with phone only.

Super-regenerative receivers hold pride of place at the present juncture.

Now, what is super-regeneration—why and how?

The effect of applying reaction to a circuit is to reduce its positive resistance, and so neutralise by negatising the resistance in the circuit.

The negative resistance may be equal to, less than, or greater than the positive resistance.

When the negative resistance equals the positive resistance the effect of applying an input voltage causes oscillation to build up, which reach an infinite amplitude, and these oscillations continue after the input voltage is interrupted. with no further increase in amplitude. The circuit is now in a state of self-oscillation.

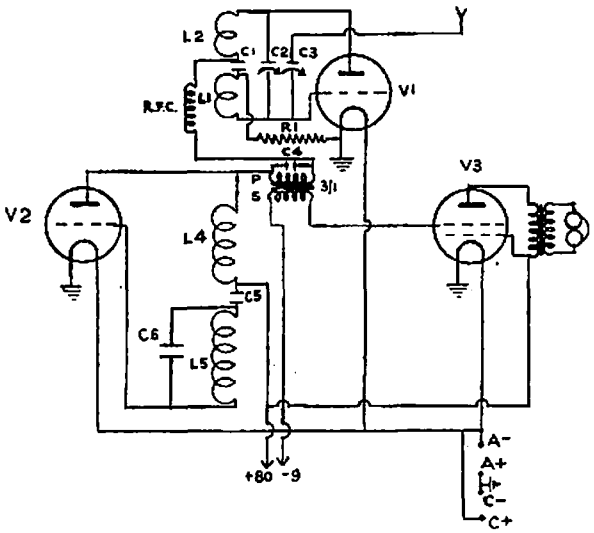
In practice self-oscillation takes place before the positive resistance is completely neutralised.

When the negative resistance is less than the positive. the oscillation will build up to a definite amplitude, determined by the effective positive resistance, and will continue only as long as the input voltage is maintained. On cessation the oscillation will die out.

If it were possible to build a stable regenerative detector circuit in which the effective resistance was lower than the critical value where self-oscillation takes place, we would have a receiver capable of enormous RF amplification.

Super-regeneration is the answer, credit of which must go to E. H. Armstrong, and consists of periodically varying the negative and positive resistance of the circuit, the balance being in favour of an average positive resistance. The circuit will not self-oscillate of its own accord, but during the intervals when the resistance is negative induced signals will build up to enormous amplitudes; the amplification factor can be of the order of millions. As the average resistance of the circuit is positive the oscillations will naturally die out when the input signal is interrupted and faithfully follow changes in its amplitude, but at an enormous amplification.

Variation in the resistance of the



RECEIVER.

V1 '30
V2 '30
V3 '33
C1 .0005MFD
C2 .000025MFD
C3 .00001MFD
C4 .006MFD
C5 .1MFD
C6 1MFD
R1 2MEG
RFC 35 turns 30 DSC on 5-16 in. rod, spacing 1-16 in.
L1 2 turns 16 tinned copper wound on a fountain pen.
L2 7 turns 16 tinned copper wound on a fountain pen.
L4 750 turns 36 DSC
L5 1250 turns 36 DSC
Wound in double slotted formers. Get three 1½ in. cardboard discs and two ¼ in. lengths of ⅜ in. diam,, wooden dowl. Drill a hole through the centre of the discs and dowl. Assemble with a brass machine screw.
Commencement of plate coil L4 goes to plate, finish to B4.
Commencement of secondary L5 goes to earth, finish to grid.

circuit C1, L1, is obtained by periodically varying the potential on the grid of the tube V1 by means of a low frequency oscillator, L5, C6. When the oscillatory potential of the grid of V2 is positive a conduction current flows from the tuned circuit, which increases its effective resistance. During the other half-cycle, when the grid of V2 is negative (Fig. 1), no conduction current flows, the circuit L1, C1 having a very low resistance, which is determined by the regenerative effect produced by the plate coil L2. It is at this period that signals build up and are rectified by the detector.

As the eye cannot follow rapid changes in anything, so does the ear act the same way, and one cannot detect the intermittent stoppage of signals at each half cycle of the low frequency oscillator or quencher, as it is sometimes called.

There is still a lot of controversy as to what should be the frequency of the quencher. However, a lower frequency than 6000 cannot be tolerated, as it is difficult to filter out after rectification unless at the expense of reproduction. The quencher should not be made to oscillate too fiercely, as a whistle will be obtained, and so spoil reception. The great drawback with super-regenerative receivers is the high background noise commonly referred to as hiss. This is brought about by the terrific amplification obtained, even the noise of the electronic stream being amplified.

It will be observed that the plate coil of the detector in my receiver is three times larger than the secondary, for reasons which I will explain. Nearly all super-regenerative receivers suffer with a falling off in amplification, mostly at the top of the band, follow the coil information faithfully, and this fault will be overcome.

Series and parallel tuning have both been tried. I favour parallel tuning. It is advisable to mount the controls back from the panel and extend spindles with ¼-inch bakelite rod.

Do not have aerial condenser in too far, as this damps the circuit down and tends to stop it oscillating. However, the more capacity in the stronger the signal.

The detector coils are mounted into phone tips, which in turn plug into pin jacks mounted on a strip of bakelite. These coils were made plug-in type, so as to be able Qsy up to 2ME on 7 metres. The distance between coils is ½ in.

When a carrier is picked up the background noise will suddenly drop in intensity corresponding to the strength of the signal.

The Transmitter.

After several months of experimenting I have come to the conclusion that there is only one method—push-pull—in whatever circuit you fancy, preferably T.P.T.G., and, of course, the constant current system of modulation.

Under-modulation appears to be the weak point with most newcomers to 5MX. I cannot stress this point too much. If you want to modulate 171A's in P.P., it is useless using any tubes smaller than 247's, and then at least two in parallel, three if your modulating choke will take it and power supply will handle it.

It is useless having a strong carrier of, say, R8, when your modulation is only R1.

I have in mind the very interesting tests carried out by 2SA and 2NO from the city and at my home at Rose Bay last September.

I could not detect 2SA's carrier at all, and yet when he spoke into the mike he came in R8 (air line distance, about five miles). If I remember rightly, he was using a pair of 171A's in push-pull modulated by 249's in parallel.

2NO's fone was also R8, but his carrier completely knocked the noise in my receiver to nothing when he was not modulating, but just had the carrier running. Had the need been, he could have lowered his oscillator voltage and still modulated deeper.

There is no need to worry what sort of a note you have, as the beauty of the super-regenerative receiver is that it eliminates all the "muck."

I am afraid there would not be many on 5MC if reception had to take place with a straight-out regenerative detector.

During our tests I tuned to 2SA, R8, and pulled out the quencher. Lo and behold, his signals dropped to R3, and absolutely unintelligible. Of course, one could expect distortion, as the detector was still oscillating. Only for that I probably would have lost him completely.

Not much need be said about the xmitter, except to remember to let your modulators go flat out.

Beware of the clowns who advise

you to put more than 300 volts on the plates of your 247, 59, etc. They simply will not stand it. They appear to, but at the expense of their emission. I know. I lost six 247's before I realised my mistake. Caution! When using penthodes do not have the auxiliary grid voltage too high, as secondary emission will take place and spoil the reproduction. The screens should never become red.

There is no need to use batteries for the modulator bias, as ordinary bias resistor can be used from the C.T. Be sure to by-pass this with a 10 or 20 mfd. electrolytic condenser, also the dropping resistor of the oscillator, with at least 1 mfd., and likewise the screens. If all this by-passing is done, you will get an extra lift of from 8 to 10 db.

Keep your oscillator plate voltage as low as practicable. Always remember a hefty carrier gets you nowhere, if you do not completely modulate it.

Receiving Aerials.

One aerial is useless owing to the changing polarisation of the waves. Best results are obtained if at least three aerials are available. I used a multiswitch, to which was coupled an 8 and 16 ft. vertical, also a 6 in. vertical; last, but not least, an aerial having horizontal and vertical positions, such as an inverted "L." As our tests used to occupy anything up to three or four hours daily, I observed remarkable results in reception. I would go over to 2NO on my 16 ft. aerial, and a few minutes later over to 2SA. I would have to get on to the 8 ft. vertical for him. Tomorrow it would be quite the reverse; in fact, it changed hourly. Sometimes I would have to receive them both on the "L" type.

During one period I received 2SA and 2NO, R6 on the 6 in. vertical. I cannot say how the "Pickard" is for reception, as I have never tried it. However, I believe it is O.K. It certainly works well as a transmitting aerial, although I got best results by using an 8 ft. 5 in. "Zepp" (vertical) with 12 ft. untuned feeders, tightly coupled with the aerial coil to the tank circuit. Feeders are spaced 4 in. apart.

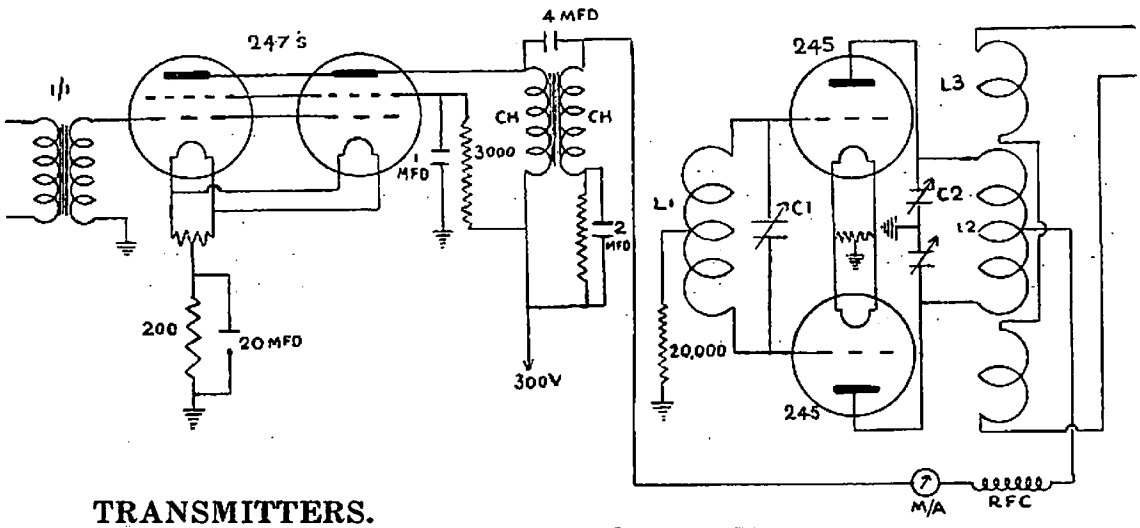
The best radiating position for a 5MX aerial is very critical, and it is advisable to tune gradually from one end of the band to the other, at each Qsy noting the brilliancy of the lamp in the wave-meter when brought into close proximity to the aerial.

If a slight glow is observed modulate with music, and if the lamp does not treble in brilliancy you are not modulating deeply enough.

The milliammeter in the plate ckt of the oscillator should rise each time the mike is spoken into. If the meter kicks down, you can be sure your moduation is carrying distortion.

The circuit of my receiver and xmitter is shown.

Self-quenching detectors have not been mentioned. These cause bad interference by radiating a very strong carrier.



TRANSMITTERS.

LI 5 turns 16 tinned copper wound on fountain pen, spaced ⅛ in. between turns.
L2 2 turns 5-32 in. copper tube.
L3 1 turn 5-32 in. copper tube each end.
C2 .0005MFD Split Stator, approx. .0002MFD each side.
RFC 36 turns 28 DSC on ⅜ in. rod, spacing diameter of wire.
C1 13 Plate Midget
CH 2 sirgle Philips power chokes.

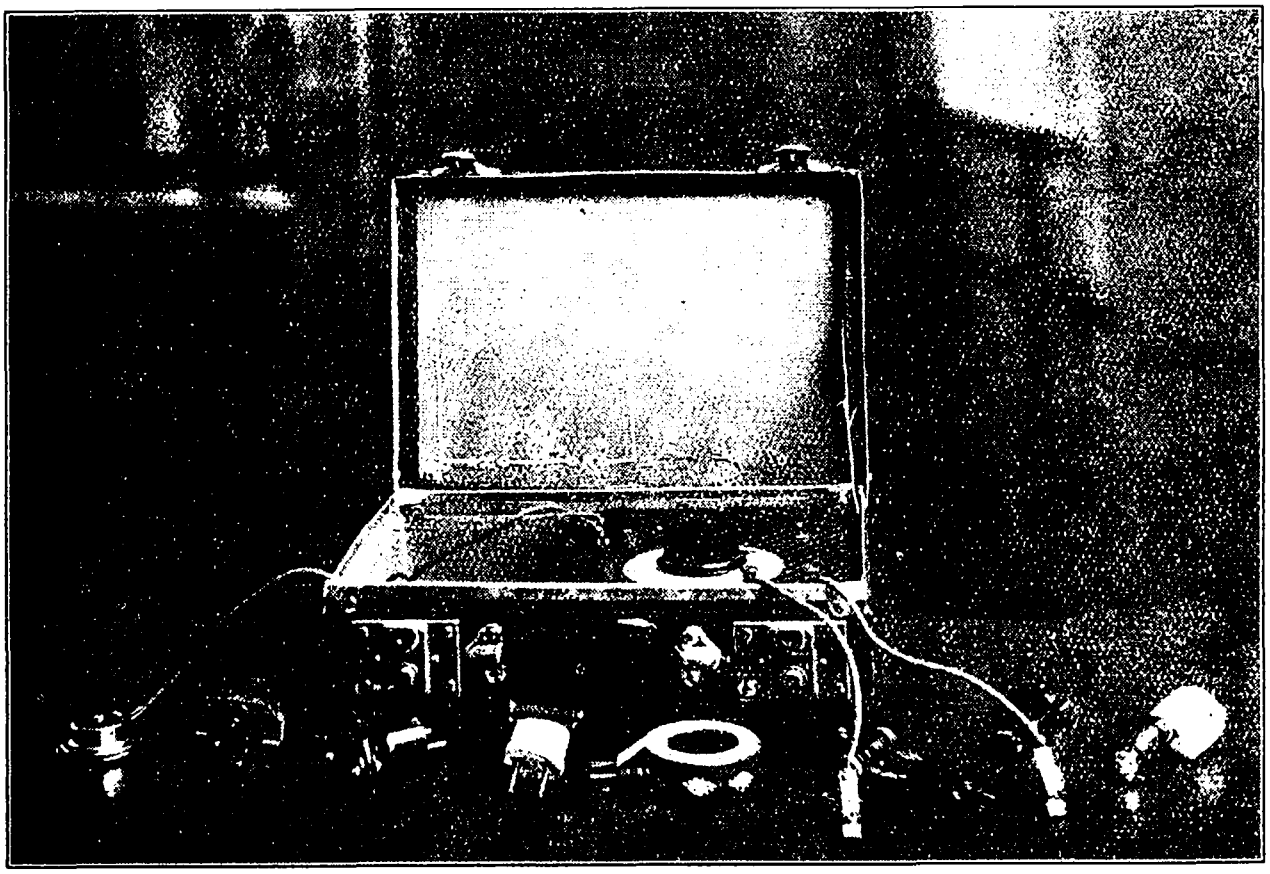
An L.C.R. Bridge

By VK3AH.

How often has every ham had the need of an instrument that would measure the resistance of an unknown resistor or the capacity of an unmarked condenser? The usefulness of such an instrument around the shack is beyond words, but few of us have ever got beyond the "wishing" stage. However, one night, I got the urge to investigate further, and the following little job is the result.

It can be made from gear obtainable in nearly every junk box, and only uses one meter, and that a mere potentiometer. The only other essentials consist of a resistance, capacity and inductance of known values. From the circuit, which can be seen in the lid of the case, one recognises the well-known Wheatstone bridge, excited by an audio oscillator. The filament rheostat is included to vary the pitch of the oscillator. The potentiometer, a wire wound of 10,000 ohms, is really the heart of the bridge, and the better its quality the more accurate results will be obtained. It must be fitted with a scale, and as most potentiometers are swung through about 270 degrees, provision must be made to exactly cover this range. It should be divided into any number of equal parts, 50 in the writer's case.

In operation, a known value of resistance, inductance or capacity is connected to the terminals at K and the unknown between the terminals at X. The oscillator is switched on, when the sound will be heard in the phone. Adjust R until the sound disappears, and note the position of the pointer. It will now be dividing the scale into two portions—A and B. (See circuit.) The unknown value can now be calculated by the use of one of the following formulae:—



For resistances and inductances:—

$$\frac{A}{B} = \frac{X}{K}$$

For capacitances:—

$$\frac{A}{B} = \frac{K}{X}$$

For example, if we want to calculate the resistance of a valve filament, the filament pins are placed between the terminals X and a resistor of, say, 20 ohms, at K. The pointer is adjusted until the howl disappears. Say we find there are now 30 divisions in A, and 20 in B. From the formula we get:—

$$\frac{30}{20} = \frac{X}{20}$$

Thus X = 30.

So the filament has a resistance of 30 ohms.

Inductances are calculated using the same formula, but capacitances use the second one. For example, say it is desired to find the capacity between aerial and earth.

They are connected at X and a known value condenser of. say, .0001 mfd is placed at K. The dial is again rotated, and this time the signal blacks out at a point leaving 45 divisions at A and 15 at B. From the capacity formula we get:—

$$\frac{45}{15} = \frac{.0001}{X}$$

Thus X = .00003 approx.

Therefore the capacity of aerial to ground is .00003 mfd.

Some of the items of gear that have been measured by the writer include gridleaks, rheostats, chokes, condensers, capacity between twin wires in lead covered cable, resistance of microphones, comparing audio transformers and headphones, and equalising choke condenser combinations in peaked amplifiers. The writer has the known value components mounted on two pin plugs, for convenience, and leads fitted with alligator clips grip the unknown article quickly and effectively. Although this is not a super-precision instrument, it is an exceedingly useful one, and will quickly establish itself as an essential in the shack of the ham who takes the little time and trouble to build it.

High Frequency Resistance of Copper as Affecting I^2R Losses

By A. Smyth, A.M.I.E.A.

The tabulation table shows the relationship between the D.C. resistance of a straight copper wire and its virtual or effective resistance at 10 mc. To use the table:—X is given accurately for any size of wire, and frequency from $X = 1.16\ na^2 \times 10^{-6}$.

a is the radius of the wire in centimeters × 100.

Y is related to X in a highly complicated way. Intermediate values may be approximated by interpolation, or better still by graph.

The next column gives standard resistances in ohms per meter, w/Mtr, which, multiplied by Y gives Rn, the H.F. resistance.

Example 1.

Find the gauge required, so that the H.F. resistance at 10 mc shall not exceed 0.5 ohm for a coil of 8 turns of 8 cm diameter.

Length of wire is $8 \times 8 = 200$ cms = 2 meters.

Now, permissible resistance per meter is 0.5/2 = 0.25 ohm.

In column w/Mtr find 0.214, corresponding to 18 SWG.

Example 2.

Find the gauge required for a coil of 60 turns, diameter 4 cms resistance 5 ohms at 1000 kc.

Length of wire = 750 cms and Rn 5/7.5 = 0.667.

Look under w/Mtr for something less than this and find 0.5793 for 36 g. To find Y for the changed frequency, divide the value of X shown for the gauge in question by 10^7 and multiply by the new value of n, in this case 10^6. Then 10.8 becomes 1.08, and the corresponding value of Y is 1.1. Hence 0.5793 × 1.1 = 0.638, which falls within the limit required.

Example 3.

Find the effective resistance of a single turn of 8 SWG to work on the 60 mc band.

There is a snag in this question, centring mainly in the leads to the condenser, and is further complicated by the resistance of the condenser plates. Ignoring the latter for the moment, the leads may easily double the effective length of coil simple. For the purpose of this estimation, say the gross length of wire across the condenser terminals is 40 cms.

X at this frequency becomse 6X = 28560, and Y is then 119. Rn = 0.001307 × 0.4 × 119 = 0.062.

This result would be correct for a straight length of wire 40 cm. long, but under the conditions cited can only be used as a guide. It is further complicated by the fact that when the wire is substantially bent from a straight line the surrounding field is rendered unsymmetrical, and has the effect of still further increasing its resistance. This factor tabulated under column F, is independent of, and is calculated from, the formula F = 7.57 a^2. For 8 gauge wire it amounts to 31 per cent., and the figure for Rn must be modified accordingly, Rn × F = Rns.

Thus 0.062 × 1.31 = 0.081, a total increase of 156 times the D.C. resistance.

Inspection of the table shows that at 10 mc the resistance increases so rapidly with larger diameters as to nullify the ordinary advantages of heavier copper altogether. This difficulty can be surmounted by using a cable of insulated conductors.

Conversion Formulae.

Ohms per inch × 39.37 = ohms per meter.

1 inch = 2.54 cm a/254 = inches.

S.W.G.	a	a^2	x	y	× w/Mtr. = Rn	× F	= Rns.
50	0.125	0.0156	0.181	1.008	33.46	33,56	
47	0.2504	0.0626	0.726	1.041	8.365	8.72	
44	0.457	0.208	2.41	1.33	3.2675	4.35	
40	0.6906	0.372	4.32	1.7	1.452	2.47	
38	0.762	0.581	6.74	2.08	0.9294	1.93	
36	0.965	0.932	10.8	2.62	0.5793	1.52	
33	1.27	1.61	18.75	3.35	0.3346	1.12	
30	1.575	2.485	28.8	4.0	0.2176	0.87	
28	1.88	3.54	41	4.75	0.1527	0.725	1.0025
24	2.744	7.52	87	6.86	.06913	.474	1.0057 1.476
22	3.55	12,61	146.5	8.9	.04268	.378	1.012 1.382
20	4.572	20.9	243	11.2	.02582	.29	1.0158 1.295
18	6.096	37.2	431	14.7	.01452	.214	1.028 1,22
16	8.128	66	765	19.5	.008169	.149	1.05 1.156
14	10.16	102	1180	24.3	.00523	.127	1.077 1.137
12	13.21	175	2140	32.7	.003094	.101	1.13 1.114
8	20.32	412	4760	48.8	.001307	.0637	1.31 1.0834
2	35.05	1230	14300	84.5	.0004392	.0371	1.94 1.072
7/0	63.5	4040	46900	153.	.000134	.0205	4.05 1.083
1in. Rd.	127	16700	194000	311.	.0000337	.0105	13,6 1.143

HARMONICS.

VK3WL recently received from the D.A.S.D. (Germany) a bundle of 250 QSL cards printed in both English and German, such cards to be used for the acknowledgement of reports received by 3WL. The letter with the cards begged Jack to accept them as a token of their appreciation for the support and encouragement he has always given their listeners in sending his card in return. Evidently our friends, the D's, are possessors of the true ham spirit, and some VK hams would do well to take a leaf out of their book. Remember, the BCL of to-day is the ham of to-morrow.

* * * *

Two of the Tassie hams, VK7RY and VK7CD, have been doing things lately. 7RY having acquired an ow and 7CD transferring to Melbourne will soon be a VK3. Congrats.; both made a wise move, hi?

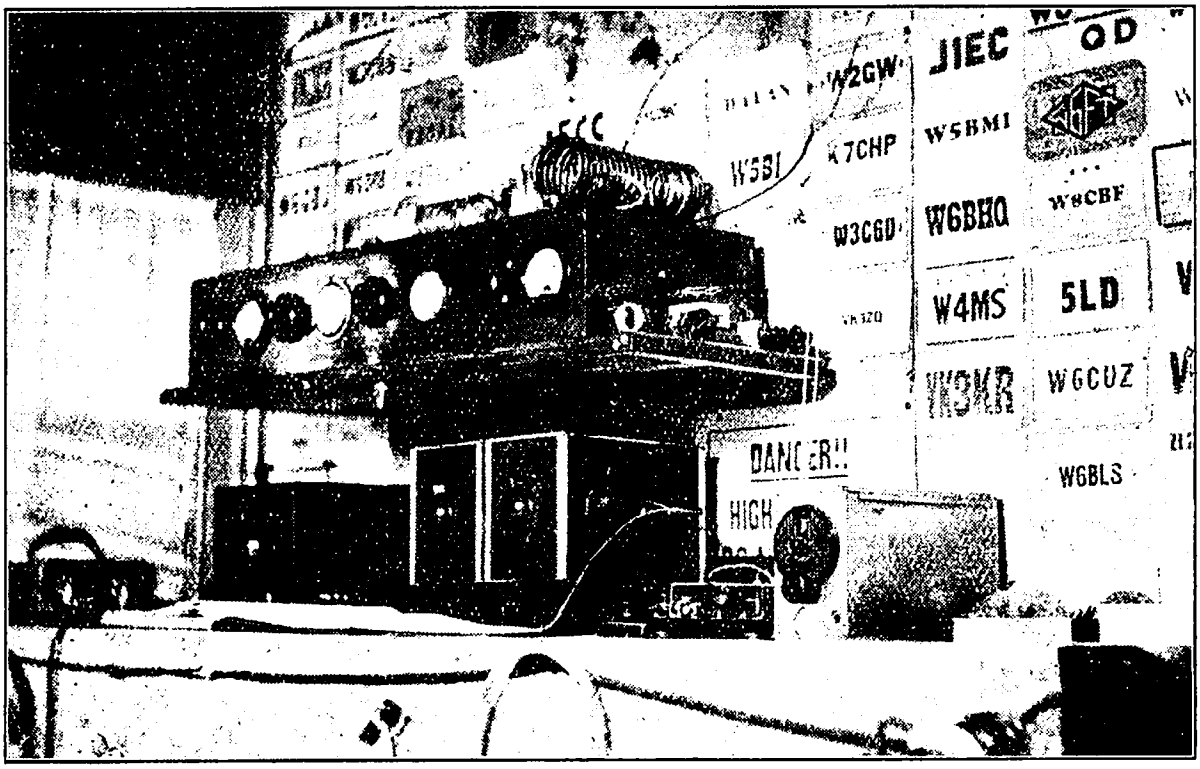
Station Description

VK3DM was issued a licence in February, 1932, and the first QSO was made during March, using a 210 in a Hartley circuit. This was later changed to a pair of 245 in Push Pull, T.P.T.G. No DX was worked until January, 1933, when a three-stage CC outfit on 7050 KC was built. With this rig Europe, Asia and America were QSO-ed. Later a change to a four-stage transmitter, using three '47's with a '10 P.A. With this rig all W—VE, Europe and Asia have been worked. The best period so far was between October and December, 1933, when 120 European stations were contacted; 30 countries in 5 continents have been worked, making W.B.E., but South America is still required for W.A.C.

The receiver is AC operated, and consists of a '58 TRF, '57 detector, and '56 impedance coupled audio. An AC electron coupled Monitor is used with a '24a oscillator and a '56 linear detector. The antenna is a half wave Zepp, with quarter wave feeders and runs due east and west.

QSO's include 180 VK and ZL and 250 DX contacts, and the best reports have been R8 from Europe and America.

The power supply for the transmitters consists of four separate packs, one for C bias, one for CO and FD, one for PA, and the other for buffer. Keying is in the centre tap of the FD and a '50 keying tube is used to eliminate any possibility of clicks to nearby BCL's.



Alterations at present in progress include using '10's in push-pull in the PA stage of the transmitter and a single signal super.

VK3DM always QSL's and appreciates reports. He is also glad to exchange photos with other hams.

WHAT HAPPENED TO MATT.

Dedicated to QYL hams and those troubled wid YLitis.

Hark to me, Hams, es the tale that I tell
Of a real gud OM that had gone QYL.
There's a tear to the tale, es a moral as well;
Es 'tis stick to ur key es hang the YL.
Now Matt was a ham justly proud of his fist;
He cud do 30 per, es it came frm the wrist;
His note was T9 es it busted the cans
Of real DX chasers in far distant lands.

His rig was a "trouncer" frm peel to the core.
Es his shack was the "berries" frm roof to the floor;
But those pure xtal sigs hve long since QSC,
Es when Matt rebuilds 'twill be sure QRP.
Es hrs why ole Matt was derated to this,
Es hrs the result of his ex YL's kiss!
She had lived nxt to Matt fer a fortnite or more,
Es one da she knocks gently on the shack door.

Wid a smile that gets Matt all hot es upset,
She sez, "Please cud u look at our radio set?"
Wl Matt shud hve seen what the YL was worth,
For she'd shorted the Aerial onto the Earth!
Es wid soft starry eyes, es still smiling as ever.
She tells pore ole Matt that he's awfully clever.
Es Matt, being human, succumbs to all this;
Es is perfectly blinded by love's untrue bliss.

The disease got him badly, as usually chances;
Es he QRT skeds to go pictures es dances;
A month of these capers showed up on Matt's face,
That he'd sold half his gear just to keep up the pace.
A little time later—a week or so more—
He cashed in his "bug" es 'twas the last straw;
So Matt thinks things over, considrble harried;
Thus far hvng gone, decides to get married!

A nite or two later, while holding her hand,
Suggests that she fall in wid what he had planned!
Wl she looks sumwhat startled, sumwhat like a rabbit;
Es then she recovers, es lets pore Matt hve it;
Es laughing R max was the way she commenced;
Es sed that she'd ne'er seen a fellow so dense;
Es in proof that she'd had pore ole Matt on a string,
Produced frm her hndbag a swell diamond ring!

Es, minus a tremor, she quite calmly sed
That she'd promised to marry a fellow named Ted;
So widout further rag-chew Matt hied his way hence;
Es, on the way home, knocked her cat off the fence. . . .
So the curtain falls down on the heart-breaking scene
Of Matt's eyes on the holes where the meters had been.
So heed ye this warning, ye QYL hams,
Es stick to ur seats in the trains es the trams.

For, though chivalry's rite in the sense of the wrd,
Its real name is trouble wid expenses incurred;
Though condx against Matt were unfavrably weighted.
An exceptional case, u mav sa, hr related . . . .
U cn take it frm me that it's wisest to mend,
Fer results are all sumwhat the same in the end;
Es, as sure as the Heavyside Layer above,
U can't run a ham-shack es fool round wid love!

NOTES ON NOTES.

By QRZ.

Judging by the notes heard from most of the new hams starting up it seems as though the handbook isn't read as it should be. I guess the OM from QST would find plenty to write about over here.

A punk ripply RAC note was heard calling ZL2AB and signed VK4US.

3ZC could do better than that RAC note too.

Another 4 in the shape of 4JJ was heard with rotten RAC.

An R9 signal as broad as the proverbial elephant's back, and whining like a Yank, turned out to be 3XF.

ZL3CN was heard on 20 trying to imitate a power leak, and he was very successful too.

ZL2FV also helped to keep up the ZL reputation for RAC notes.

And Don B. Knock himself was heard on 40 with a note that was probably good on 5 metres some years ago.

Rather surprised to hear 7CD with a rotten note after his usual PDC.

Surely 2BK could manage a better note than the one I heard.

2YL must blot out plenty DX for the early morning Sydney gang with his awful note.

3NT—the NT being for the "not too" in "not too good."

Listen to 3BJ and hear the best note in VK. New hams, please note.

2KE was heard calling ZL2GN with ripply RAC and plenty bumps. What must BCL's get?

2FY seems to alternate between his decent T9 signal and an attempt to imitate those Yank xtal RAC notes. I would like to know just which one does get out the better.

2XM and 2XF also using terrible creations.

2ED spoilt FB signal by calling NNGT. A little bit of imagination makes it CQ.

2SQ outshone everybody by coming on with PAC.

2DR heard with a rattly type of RAC.

3OR forsaken xtal for a very broad DC note.

For long CQ's the EA's are hard to beat. CT1JW also calls for five minutes without signing.

2JN another RAC fiend. 3XQ ripply RAC.

W1DHE had that little bit of imagination that made CQ DX out of YQ XU, as sent by 5KG.

What must 5WP do to the local boys? Even from this distance plenty of bumps can be heard several degrees either side of his wave.

4EL makes himself a nuisance with a very chirpy PDC note.

Why can't fellows on self-excited quit blooping all around the band when a contest is on?

Seems to me that the self-excited motto is "Power, and still more power," and "Don't worry about the note."

73 now, and please don't wear out the RAC keys next month.

QRZ.

CENTENARY CONTEST!

By VK3ML, Manager Contest Committee.

When we announced our world-wide contest in the last issue we held back the prizes that were to be won by the VK hams. We told you all about the super-attractive certificates that were to be awarded, besides the other valuable prizes. Next month you will see photographs of all the prizes before your own eyes. You will see an 852, a TB 1/75 and an 800 labelled first, second, and third prizes respectively! What a goal to strive for! There will also be a photo. of the certificate award, which is one that any VK ham would be proud to have hanging on the wall. It looks the part; what with the shade of Batman casting an eye over old Melbourne, and with the excellent colour printing of the words "Melbourne Centenary International DX Contest 1934," etc., it is really one of the best ever offered to the amateur.

We are greatly indebted to Amalgamated Wireless of Australia Ltd. and Phillips Lamps Ltd. for their generosity in donating these coveted valve prizes. Here is your chance to fulfil your heart's desire to win a REAL tube.

Opposite, we are printing a copy of the log design that must be returned after the close of the contest. It is quite simple and needs no enlarging. Start drawing a few dozen of them now. They'll be wanted! The world has already learned of the W.I.C. October Contest.

LOG : Melbourne Centenary International DX Contest, 1934

Name..

Address..

Callsign..

Operating at

Station..

Transmitter..

Input to P.A...

Receiver..

Type of Aerial..

Date	Time G.M.T.	Band in K.C.	Station Worked	Serial Numbers		Signal Report			Distance Estimated (Miles)	Points Claimed
				Sent	Received	QSA	T	R		

Total ....

To be multiplied by

= Grand Total ....

The following is a description of my Station ;—..

I hereby certify that I have operated during this contest in accordance with the rules laid down, have adhered rigidly to the regulations governing amateur radio in my country, and that the score and the points set out above are true and proper.

Signature of Operator..

OLD BOY DOES A BIT OF EAVESDROPPING

Not owning a xmitter, but being an enthusiastic ham listener, when approached by the editor to scan the bands and give my impressions I readily fell in with the idea.

Starting on the 40 band one Sunday morning at 9 a.m., the first ham was 6MN. This fellow going hot stuff on RAAFWR work with 6DJ and 6LK. Now who is this bird with a f.b. xtal. Oh! 6RA and he wants to try fone with MN. Good, says MN, and I listen closely on my super short waver.

A few words come in O.K., then nothing but grunts, so let's see what MN has to say. Nothing doing says he, but my word this fellow (MN) has some kick and f.b. fone.

Down the dial and here is another on fone. Hullo CQ, VK6CP calling. Come in boys. Ah, he has landed someone, but this chap's fone is weak. Oh, it is RW down at Wagin, but his sigs. are hard to bring up. At times they are good QSA5, R4, but quickly go to pieces. These two hams seem to be always on fone on Sundays, and from what I can hear they are piling up a lot of dope on skip and fading.

We will leave them to it, and now here is a f.b. IC.W. sig. all the way from RT at Grenough.

Next please.

Old 6DA with a f.b. xtal. calling CP, and gets him. Sorry CP, but I must say it. Do you live in your shack on Sundays?

Well, boys, on again during the week, and CW is the order of the nights. CQ DX. Ah, this must be GF. Ye gods, no! It is KB got the craze, so, boys, say good-bye to him for a while.

Well, cheerio, gang, and look for me next issue with some more jibes.—Yours stickingly,

OLD BOY.

ATTENTION, COUNTRY HAMS!

We are continually receiving requests from country and outback hams for more dope on battery and M.G. powered transmitters. They say that magazines to-day are catering for the chap who has A.C. laid on, and tend to forget the man who hasn't a power line for miles around. Yes, we quite agree, too. The modern trend of progress points to enormous receivers and higher-powered transmitters, whilst those who have not either the power or cash to run these things are forgotten.

Now, we in the city really cannot imagine what the country man has to put up with, and we marvel at what he actually really achieves with what gear is available. It would be ridiculous for us to write pages of dope on suitable country stations. If we cannot put ourselves in their shoes, how on earth could we write from their point of view? Therefore, we appeal to all you country chaps to send in full information on your gear so that we can sort them out and write up some really hot country-type transmitters. The essentials are: Power, type of transmitter, valves employed, and general information showing relative merits of each component. These will not be printed as station descriptions, but you can feel that by fulfilling this request you will be helping some individual that has not had the benefit of your experience.—Tec. Ed.

To the Editor.

Sir,—On behalf of the hams in VK5 I would like to say that I think the article, "Random Ramblings," by "QRZ" in last month's "Amateur Radio" rather overstepped the mark in ham spirit and the good fellowship which exists in that fraternity.

The impression I gained from the article was that VK5 hams are practically the only ones on the air in Australia who are guilty of poor notes and signals. Although one or two stations in other States were mentioned, more than half the article was devoted to a sarcastic criticism, which was in some cases quite unjustified, of us local chaps' notes, phones, keying, and signals in general. Now, isn't that a bit unfair?

One only has to put the phones on any night in the week to hear dozens, and in fact scores, of hams in VK3 and VK2 absolutely blocking the air with broad, unstable signals, with notes varying from anything between 16 to 500 cycles. Why, then, level such unfair criticism at our State, which, I venture to say, has a lower percentage of poor signals on the air

than any of the larger States, which "QRZ" barely mentioned?

It appears to me that "QRZ" for some inexplicable reason has some dislike towards us VK5 hams, a feeling which is contrary to all the rules of ham radio.

And, in conclusion, "QRZ," come forward like a true ham and meet us face to face on equal ground. No author who believes in the sincerity of his writings would dream of using a nom de plume, and I should like to see further articles from your pen signed like this letter is.—Yours, etc.,

ERIC HALLIDAY,
South Aus. Editor of "Amateur Radio."

Wonga avenue,
Hectorville, 20/3/34.

How to Win the Contest

By VK3WL.

During the four week-ends of October, 1934, for the first time in history, an international DX contest will be staged by Australia. Preliminary details of this test, "The Melbourne Centenary International DX Contest," were published in March "Amateur Radio." How were these details received by you, Mr. Ham? Just how, is most important to Australian radio and its prestige internationally. We are inviting the whole world to QSO us during this contest; we have made a sked with creation. It is up to every Australian amateur who has ever worked one single station outside VK to give this test his wholehearted support. I have yet to meet a ham who was not even slightly interested in DX contacts; here is your opportunity, the whole world straining its ears for the tiniest chirp from VK. It is vitally important to the success of Australia's first international contest that at least 100 VK stations are on the air. Australia, of whom you are all so allegedly proud, will look very small fish if a mere dozen or so VK stations take an active part. We cannot expect any interest internationally if the available VK's can be quickly worked; nothing palls so much as hours of fruitless effort. It is up to everyone of us to give the test all the time we can possibly spare. Why shouldn't you take part; are you afraid you will make a poor score? A pretty flat excuse really. Any man who is afraid to take a whipping hardly merits the name of "Aussie." If you are one of those people who have a selfish nature, like my own, and like to think they have a chance of ultimate success before they will take part in any contest, I am prepared to help you, if it is possible for me to do so. The Editor of "Amateur Radio" imagines that I have the "good oil" on how tests may be won, and has honoured me by requesting that I disgorge the secrets, hence this attack on the ancient mill. As to whether there are any secrets of success in tests I cannot say, but I can tell you what I intend to do about winning this contest, but I do not think it necessary to win a test to get a maximum of enjoyment from it. It is quite a common cry nowadays to urge hams to experiment. "Forget this eternal CQ DX," they tell us; the DX hound is castigated on every possible occasion. I have always been somewhat amused at wails along these lines. Look the world's or VK's best DX men over, I cannot call to mind one of the dozen or so I have in mind who is not a born experimenter. DX, over a period, is no fluke, nor does luck enter largely into the picture; it is mostly cold, hard arithmetic, and demands immense attention to detail and tons of concentration. The DX hound must be a student of conditions, and is always applying the latest technique of radio to his transmitter and receiver, and he is eternally at his antenna trying to improve his results. I could relate many anecdotes of VK5HG, VK4GK, VK2NS, VK7CH, showing a passion for small details that is almost laughable. "Forget DX and become an experimenter," very amusing, really. Therefore, the first secret has been given—if you would win a test you must work hard. Certain

essentials must be attended to; in my opinion (I am probably wrong) they are, in order of importance—1st, the antenna system; 2nd (a) a good knowledge of conditions in your particular locality, and (b) the tactics you adopt during the contest; 3rd, a good receiver (the better the better); 4th, the transmitter.

I propose to take them in the reverse order. Next month I will describe my transmitter, which may be a bit unusual, according to Australian standards, but is certainly up-to-date, for operation in a district infested with xtal BCL's makes practically perfect clickless keying an essential for test work during BCL hours; a system successful here will also be described. The following month a receiver tested under gruelling conditions, and proved a trump. It may be necessary for you to operate in a district alongside half-a-dozen high powered stations, whose QRM individually is sufficient to block out the whole band; this receiver has come through such a test with flying colours. Then I can only tell you what conditions may be expected in VK3, and when you may expect to get QSO, different parts of the world from VK3, and how I propose to utilise that time. Whether my ideas will be worth while will be for you to judge, but if you have never previously essayed a test perhaps my previous experience may be helpful. Then, finally, and most important of all, your antenna. Honestly, I do think quite a few hams of my acquaintance, who bemoan their lack of DX, could substitute the family clothes line for their present antennas, and get better results.

Several antennas will be discussed, and one of them should suit most everybody. It is useless trying to shoot rabbits with an unloaded gun, or one aimed in an opposite direction to the aforesaid rabbits. I will endeavour to assist you to aim your gun in the correct direction, so you may shoot a maximum of DX rabbits. Please do not think I imagine myself a paragon of test work; far from it. I get immense pleasure from a contest, and I know you will if you will be serious about it. To be a success it is not essential to be really QRO. VK3KX, a new man to tests, used 600V to a pair of 46's push pull in his PA during the Yank test, and with a slice of luck would have been the winner for VK. VK3MR, also a test novice, is apparently the winner; previous experience also seems to be unnecessary. VK5HG, Australia's DX king, uses a modest 50 watts, 600 v/on a pair of 210's. VK4GK, one of VK's most successful test men, is content with 50 watts. If I can get a KW out of my TCO 4/10 with 600v on its plate, I most certainly will use one KW, otherwise I will have to be content with lower. Therefore, any of you have sufficient power. The receiver will not be expensive, and is really the minimum in efficiency that any ham should be satisfied with. Give it a try, just this once, in VK's first international effort, and I know you will enjoy every minute of it.

HAMADS

Payment in Advance.

Rates.—To Members of W.I.A. and Affiliated Bodies, 2d. per line or part. Non-members, 4d. per line or part.

QSL CARDS, printed by a HAM. Be sure of a good job. One colour, 250 8/6, 500 12/6; two colours, 250 11/, 500 16/.—3RF, 42 Orrong cres., Caulfield.

Rush your order for QSL CARDS to A. R. Cook, Printer, Mordialloc, S.12 (Vic.).

Don't lose DX through commercial QRM. Have your crystal ground by VK3WL. Single slabs 15/-, DX getters, set of two, 25/-. Satisfaction guaranteed.—VK3WL, Coburg, Victoria.

HARMONICS.

The Birchip gang are still waiting to hear 3TH's super 200-metre fone xmitter. Won't she mote, George—or are you saving it up for the competition?

VK3 SECTION NOTES

Key Section

(Conducted by L. T. Powers, VK3PS.)

It seems that radio amateurs do not resemble fishing fans. A fisherman will stand up any old time and tell you of the fish that got away, but we have great difficulty in getting hams to tell their experiences.

After much persuasion 3HF gave a very interesting talk at the last meeting on his experiences with the Mackay Expedition, and in past months other members have been called on to give talks on various phases of the radio game, but so far no one has volunteered to perform this duty, which has made recent meetings even more interesting than usual. Some of the gang must have known some strange happenings that would be of interest to the others, so how about coming forward and telling us about them?

At the present time the forthcoming Centenary seems to be the most popular topic of conversation everywhere. Everyone seems to be looking to it to finally end depression and put us on our feet again. There was a stop-press note in last month's issue that we have some stickers available for QSL cards. They are quite attractively coloured, and we can all do our bit towards the good cause by seeing that they go on all overseas QSLS as far as possible (we could only get 2000). We will be glad to send some along to anyone who can use them.

Apparently our hot spell during the W/VE test was not generally appreciated, as there have been moans all round about QRN, though, no doubt, some good scores have been piled up. Incidentally, 5LD was in VIM during that week, and said he much preferred 109 deg. in Adelaide to our modest 103 deg.!

The proposed Centenary Contest seems to meet with general approval, and the prizes are well worth having. It will be well to remember that prizes can only go to financial members of WIA or affiliated bodies, so see that you are financial when the test comes off. otherwise you will have to forfeit that 852.

Starting on May 9, the Institute is running an AOPC class under the able guidance of 3BQ and 3UI, and as the numbers are definitely limited it is advisable, if you know anyone who wants to attend, to tell them to apply to the Secretary WIA as soon as possible, as there are already a good number of applications in and some may have to wait till the next class is held.

As the next meeting of the section would normally fall on the last day of the Easter holidays, it will be held on Wednesday, April 4, instead of on the Tuesday.

VK3 Phone Notes

The last meeting of the phone section took place on Tuesday, February 27. It was quite well attended,, and the Allocations Committee received a record number of applications for frequencies. Maybe it is "competitionitis" which is prompting the phone gang to extend their efforts.

It was not until the meeting had actually commenced business that 3TH noticed, in our midst, a visitor in the form of Mr. Bert James, of 3LH fame. However, better late than never, Bert was duly welcomed, etc.

The members of the Publicity Section (as the Key Gang call us) were reminded that the new A.O.P.C. class would be commencing in April, and to give.all our prospects ample notice, as the maximum allowable under this time will be thirty students. So all interested should apply for enrolment early, as candidates will be put on the rolls in order of application.

Phone men are reminded to make announcements to this effect.

On the subject of the competition open to country and town phone stations, the committee met on Tuesday, March 6. when a discussion took place as to rules and regulations to be decided upon. 3JB produced a copy of the conditions which were drawn up on the occasion of the last phone competition. 3TH went through this item by item, and a successful set of rules was drawn up, embodying all the experiences and advantages gleaned by the last effort and omitting the unwanted parts. I think 3TH has

been thinking competition, morning, noon and night, as he certainly has ideas for all branches of the job thoroughly thought out. Handicapping, according to the 3TH method, is perfectly simple, and it is up to the phone gang to put their heads and transmitters together, produce some really FB sigs., and give the judges a tough job.

Quite a lengthy discussion took place after a suggestion had been made that one station go on the air on a certain night, of which the New Zealanders would be advised, to make short transmissions on certain of our allocated frequencies to determine the one most free of interference from the New Zealand observation point. However, we later thought this rather unnecessary, and perhaps further discussion may be made at the March phone meeting. It seems that the majority of the New Zealanders experience the brand of interference mostly arising from power leaks or other man-made sources, and the intensity variation between about 1350 kc. and 1232 kc. would not be worth consideration.

Then there is the question of American stations coming in on top of us in New Zealand, or vice versa, but we understand that the Americans, particularly, that are heard there now will be fading out completely by about the competition period.

By the time these notes appear in the April issue of "Amateur Radio" we expect all entrants for the competition will have made application, namely, at the March meeting, Tuesday, 27th. So I suppose we shall hear signs of activity in the cleaning up line, and general improvement efforts of a gradual nature.

Very much more work was done at the last meeting of the competition committee than heretofore, and there will be much to go over at the March phone meeting, so April will see things going with a real swing.

Cheerio, es 73's.

3DH.

COUNTRY NOTES

Things in the bush have been relatively quiet during the past weeks, but the same old gang seem to blister the ether consistently, despite QRN and the always present local QRM, which the prevailing heat wave has been responsible for doubling—every fan, refrigerator or what-have-U has run non-stop for some days. Talking of QRM, I know of one fan (and so does 3LH) who can be heard over a radius of a mile.

During last day or so the 3500 band has been fairly active. VK2's are apparently getting their rigs all "het" up for the winter. Heard 2RJ with 2NS present on visit the other night. R.J. said he would not let Trev., "the milk fiend," go home for a day or two, as he had a young Jersey cow "coming in" and wanted NS to try out the milk.

VK5 has started to come in again—worked 5LR and 5QR during the month. The latter is what is known as a "kid belter" (Ed. Dept.), and strikes some queer locations. At present using 1½ watts on phone from about 150 v. "B" watts, and arrives here Q5R7/8. Only a few VK7's heard this year so far—hooked 7RY the other nite and chin-wagged with him about an hour. He is troubled with an elusive hum in speech amp., and guesses he'll have to do a bit of rebuilding. Personally (3WE) some 40-odd phone QSO on 80 for the month, reports varying according to the state of the local DC power supply. Much of the work has been in four, five or six-way hookups, which are proving most popular and enjoyable. Those associated in these hookups during past weeks were 3CE, 3ZK, 3ZL, 3PY, 2HU, 2NE, 3LH, 3CH, 3AN, 3KR and 3WE. 3LH and 3CH spent a few days in town, but brought back no new gear for a wonder. Alf got a "new" car, which is (according to him) the last word. 3KR had a couple of rounds with "Mr. Flu," but emerged victorious. Rumour ses the "Xtal" will return from holidays this week. In the meantime has been punching the key in the Yank test, "just to have an interest and help some Yank win," he says. 3OR heard with usual wallop on Sunday A.M.'s. Leaves on a trip round the Islands end of this month. He has received so many offers to "carry his bag" that it's no use me applying. 3ZL, R9 Telefunken King, has gone back to 333 tinfoil—got all the tobacconists saving it for him. A new one is 2NE, Mosman, hitting R9 here with good modulation, and usually with a stray YL or so in the shack. Ask him to tell the yarn of the innocent YL of Bondi—he'll send the last word or so on CW. 3AN has improved of late. Stick to it,

Arch. Can't you get a power line out your way? Another newcomer to the north country gang is 3EG, Tallangatta (late 2EG), who has quite a wallop, while 2TH, Wagga (late 2nd op, 2UO), now branches out on his own, and with a breed of modulation that has more tricks than the family mongrel has fleas. The no-meter Telefunken experts at 3ZK have improved the rig lately, but Jimmy nearly qualified for wings while en route to Bendigo for the fire demo. Was hanging out door of carriage coming into Kerang, waving to a YL (or was it looking for 3KR?), when he tried to push over the "No Road" sign. The sign wasn't even bent, but Jimmy was—but now R9 again. The Sunday morning QSO's, a la 3KR, 3OR, 3HL, 3CE, 3NN, have again started.

After suffering the Birchip QRM for some months, and hoping it would prove better than Merbein, his late QRA, Herb., of 3LH, now proposes to remove to Sea Lake. 3CE hasn't got that xtal xmitter going yet. But we have hopes before the winter.

3PY not heard on 80 lately, but he, along with 3KU, and occasionally with 3CH and 3LH, annoy or cater for (according to taste) the BCL's on 200 metres.

Well, about QRU for the month. I'll be seeing U.

3WE.

Western District

The 80 metre band seems to be almost deserted at present, except for a few fone stations, despite the surprisingly good conditions on this band lately.

However, DX conditions on 40 have been so good lately that everyone seems to be there, chasing it. Heard five continents in ten minutes there one night, about a week ago, including that elusive South American, wanted for W.A.C., but nothing could be raised. FM8IH was QSA5 R5, and HC1FG QSA5 R7.

3YL has vacated to Macedon for three weeks' holiday. 3DX has staged a comeback to 40 MX, using two-stage xtal rig coupled to his 200 metre aerial. 3JA, of Warrnambool, spent a few days with the Coleraine boys recently, bringing his RF meter with him. The latter registered over an amp in 3OW's feeders. Jack was far too wary, though, to go home without it, hi! By the time this appears 3OR will be well on his trip round VK. Keep a look-out for him from PK stations. Believe it or not, old 3NQ has gone QYL, hence his absence from the air.

Returning home at about 1 a.m. a few night ago, 3OW found his two sisters, who were home alone, in a state of considerable agitation. A shower of rain shortly before had shrunk up the cord which brings the self-starter on the engine into action. Switches closed and the engine started up with a noise like the crack of doom, hi! Sisters bravely hopped out of bed and turned off the engine, but couldn't stop the starter, which whirled the works round until the battery went flat. Op has been ordered to take the engine with him next time he goes out, hi!

We were glad to see the fine articles by QRZ in "Amateur Radio." That's just what's wanted, and perhaps he will go one further and mention all stations heard operating out of the band, crystal-controlled or otherwise.

That's all for now. Please let's have your notes, boys. 73 es cheerio.

3OW 3HG.

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

ZONE 4

News comes to hand that the W.I.A is running a world contest, VK versus the rest of the world. This is the best idea ever, and should mean wonderful things for Australia. It is up to the gang to get on the air for it. Doesn't matter how many hams there are in each district, or how bad the qrm will be, the only thing which will make it a success will be the loyalty of the gang. To my mind, out of the 1000 odd hams in VK we should have 500 entrants. This is our one big chance to show the world what we can do. Newcastle will be well represented with six or seven entrants.

Another ham has gone west. In other words, got married. 2MT went off the deep end the other day. The boys join in wishing you all the best, Charlie, and hope you succeed in persuading the YF to join the ranks of the hams, too.

2KB is building the perfect transmitter—steel frame, rack and panel, 4 stage—using a 50 watter to push an 852, with 3000 jolts.

2CS is at it again. This time it's to be a pair of 211's, with many jolts on their plates. At present he is qrt owing to the early demise of a power transformer.

2OF—well, the least said soonest, etc. DX—he doesn't only work it, but peals it off in huge lumps, 10, 15, 20 yanks in one sitting, and all with a pair of 245's TPTG.

The worm has turned at last, or, should I say, is turning? The long-awaited ss receiver is at last to make its debut to the incredulous Newcastle hams. Next week should see all the critics silenced and 2ZW's new effort blossom forth into something worth while.

We have had 3ET with us during the last month. Herman certainly created great interest during his stay in Newcastle, particularly as regards his code, his first being one of the best ever heard here. Not only did he clean us up in this respect, but he created quite a sensation amongst the tennis fans, many of whom were unable to handle his corkscrew services.

ZONE 6.

Conditions on 40 metres have been very fair this month, despite a fair amount of QRN. That band seems to be seething with activity, although very little work has been done from this station owing to limitation of power supply.

80 metres has been very quiet, but this last week is reviving. 2NM, as usual, has rebuilt his rig, and suggests some more alterations shortly. 2RJ, of Mandurama (a funny name, but not a bad place), has had his genny rewound, and also rebuilt his gear. 2WH is evidently still on vacation, also 2LM. 2RS is back at "Clare" after a prolonged sojourn near Ballarat. His fone has also taken a turn for the better. Ivan, late 2EG, now 3EG, conducts his business of removals and replacements at Tallangatta these days, where he has installed his gear. He reports FB location for DX, is using grid modulation and fone OK. 2KR, of Gunneday, still QRP 4 watts to 201A; but has installed new modulator, P625. 2BP, at Hazelbrook, intends to obliterate the band this year. He begged, borrowed, bought or stole a big Toob somewhere, and is saving up to get the gear to feed same. 2QA has laid the foundation stone of another new receiver. Will give details later. 2NS also back after a prolonged absence. Seems to have a new speech amp. Fone is very excellent and natural. 2DR, another 80-metre addict, has been rebuilding, and has a 2-tube electron-coupled receiver. Also uses 46's in transmitter.

73's. VK2QA.,
A.R.A. Zone Officer.

ZONE 7.

Conditions during February in this part of the state were most unpleasant. QRN has been generally bad, and DX has been scarce. However, during the early part of March things have greatly improved.

80 metres is beginning to awaken again, although QNR is troublesome at times. Well, the B.E.R.U. test is over, and apparently the winner of the trophy is not in VK this time. The American DX contest is attracting a lot of attention if the QRM on 40 metres is any indication.

Not much news of the gang this month. Guess the YL's are reaping a harvest.

2TH, of Wagga, is active on 80 metres, with a nice hefty sig. Is talking about B class modulation, so we should hear some decent fone from him soon. The WO gang not very active lately on account of the bad conditions.

Jack, of 2EZ, has left this zone, and is now at Killara. Hopes to be going again soon. 2GT has taken over the responsibilities of the QRP Club, and has shifted his QRA to Batlow again. 2PN is on 40 metres, and works spasmodic DX. Ross has had the misfortune to bust a couple of 83 rectifiers, but still manages to keep on the air with his old ones. 2KD heard on 40 metres, with FB xtal sig. 2FZ still raking in DX, and is waiting for cards to get his WAC. 2FI is more or less active when time permits. 2XF heard on R.A.A.F.W.R. skeds. The Reserve is making a start again in VK2. and should be FB when in full swing.

2LB still blowing off steam on 200 metres. 2TZ says he is coming on the air again. What's wrong, Bert, did she give you the cold shoulder? Anyone knowing the present whereabouts of 2TA, 2WA or 2JQ please report. No reward offered.

Well, cheerio, gang.

73. ATHOL (VK2FI),
A.R.A. Zone Officer.

ZONE 8.

VK3EG, formerly 2EG, of Quirindi, is back on the air at his new QRA, and is getting out FB. During his first week he was able to get R8 from W2, 6 and 9 dists on 40. He is R7 here on 80; but not audible on 40.

A new addition to the ranks is VK2QD, who has a PDC QRL, and is QRP using a TNT Circuit. Conditions for the first two nights of W. Contest were FB, but QRM a bit troublesome Hi.

Well, gang, am very QRL here this month; but hope to have more rag and rope next issue.

73's to all. NOEL (VK2OJ).
A.R.A. Zone Officer.

NORTH SHORE ZONE.

2AG has been on 40 a lot with a xtal sig. Haven't heard from Alan, of 2AH, for some weeks. He has new s.s. super rx. Bruce, of 2BA, has gone to the Islands on board a steamer as purser, and will be off the air for some time. Will let the DX have a spell for a bit. 2DU has been working some DX on 20, including a G. Dud has built a new RX, using 58, 56 and 59, and says sigs are three points better than on his old four-tube battery job. 2GJ has been on 40 occasionally. 2GW is very conspicuous by his absence. Jack, of 2HG, is still working DX late at night, or rather early in the morn. DX at 2HG has been exceptially good; however, power QRM is causing trub lately. 2HT, from out Cremorne way, is putting out very solid sigs from a Hartley rig. 2HL has been on 80 mx a bit, but is still very keen on 5 mx work. 2HY finds things livening up during the last week on 20 mx. During the B.E.R.U. Roy was using a Zepp for the first week-end. 2JV is still busy studying law at the Uni. 2JY hasn't come on yet, but threatens to do so soon with a brand new rig and plenty of come-back enthusiasm. Paul, of 2KA, has built a new E.C. receiver, and says it's fb plus. 2KA is gritting his teeth over the fact that he didn't bother entering in the ARRL test. 2LD rolled along to the last A.R.A. meeting. He has an 150 watt tube lying cold in his shack, and Len hopes to get it perking soon on the end of a crystal rig. 2LD will be in Jervis Bay by now with a portable, so look out for him, chaps. 2ND is back again from VIB, after absence of about seven weeks. 2OE has been off during the month, and I presume he is rebuilding. 2PV, a new ham from Mosman, hasn't been on the air yet, as he is too QRL Uni. Vale, 2RD, he's married now!!! 2SZ has been on a bit. 2UG is still quiet, but rumours are flying round that he intends to make a come-back shortly. Bill, of 2HZ, seems to be darned interested in Wollongong. Goes down there each week-end, and radio is gg by the board. Tch, Tch. Jim, of 2YC, is the proud father of a brand new junior op. Heard Ian, of 2XC, pumping away at the ARRL tests last week-end. Ian "can work no mean Yank," as the saying goes. 2QO has been heard on 40 with a good solid PDC sig. Max, of 2NE, has a splendid rig, and is concentrating on 80 mx fone at present. 2VG has been the most consistent station on 40, I think.

The Manly district hams are in the notes this issue, thanks to Tom, of 2KM. Here they are:—2HF, a la commercial shortly, has a big rig with two brand new RF meters, in these days of depression, hi! 2UP on xtal now, with a hefty backwave. 2EL uses 247 C.O., 210 P.A., with 90 watts on the poor thing. 2NG plays tennis during the day now, and goes DX hunting during the night. 2KM is working some DX now and again. 2DA not on much, but occasionally makes a great noise with an 852!! 2NB has promised me a station description and photo., but as yet nil to hand. 2QK was hooked to aerial 20/1/34. Xmitter is three-stage xtal of rack type, using 247, 247, and pair 46's in PP as class "B" P/amp. QRA is C. P. Smith, c/o Bank of N.S.W., Manly. 2QK was 2ZZ and 2CP back in the days when valves were placed in cotton wool at night, and is back again anxious to QSO. Bob, of 2QR, has been good enough to send me the following news re doings of the chaps over his way. Here it is:—Conditions on 7 mc are picking up, and W1GMS is coming through here at QSA5, R5/6 at 9 a.m.

Well, now for the Epping district dope:—2NR is leaving for England shortly, and as soon as John can get a couple of 852's he will be on the lookout for all his numerous friends in VK and ZL. 2YR has an Alsatian who instils fear into the hearts of visiting hams. 2ER is going QRO. 2JX is blotting out the Yanks nicely with a T9 xtal sig. 2ZN seems to me to act as technical adviser to all the new hams. 2NP (Chicker), of Gladesville, likes traffic handling, and is very easy to copy. He is an all-round good op, though he is out of work and on QRP. 2DF is rapidly joining the ranks of the phone cranks. 2QR says there are plenty of Yanks at R7/8 here now, and they are all falling over themselves to arrange skeds for the test. So if condx as good as in the B.E.R.U. some fine scores are sure to be made. If anyone is left out I'm sure it's not my fault. Hi!

C U next month, chaps.

DON (2DR).

VK4 (QUEENSLAND DIVISION)

The monthly meeting of the above Division was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, March 2, with a good attendance of transmitting and student members.

It was decided to hold the annual meeting on Friday, April 13, and it is hoped that there will be an extra large attendance.

Kindly note that all correspondence for the Institute should be addressed to the Secretary, Box 1524V, G.P.O., Brisbane.

Conditions on the 40 and 80 metre bands have been only fair during the past few weeks, QRN being very solid at times, and making reception very bad. A few of the boys report that European signals have been fair during the early hours of the morning on 40 mx, QRN not being so strong at that time. 20 mx is very patchy, only a few weak signals being heard on this band.

4TS has not been heard much lately; understand Ted is building a new AC receiver. 4ZX has been making alterations to his aerial system; has spaced his feeders about four inches apart, and states that since doing so reports have been much better. 4JF is operating a portable Hartley at Manly, and is doing fb. 4US reports that he has been landing some good dx in the early mornings on 40 mx; has been working G's, F's, etc., with an input of 14 watts. 4UK states conditions not so good at his QRA; too much QRN, so has taken to grinding xtals until conditions improve. 4WT has been spending a lot of time on 20 mx, and says that during the B.E.R.U. test he was able to land G's like shelling peas. 4LK and 4RS are both putting out very nice signals, and are heard often in VIB at R7-8. According to photos. seen recently, both of these boys have very neat stations. 4UU puts out a very hefty signal, and seems to have no trouble in landing the Yanks. 4JB still QRL amongst the sheep out Cunnamulla way; expects to be back at his QRA in a few weeks' time. 4GU been QRL, making alterations to his shack. During the heavy rain of a few weeks back Dick's OW had to come to the rescue and save his gear from getting washed away. 4RC intends building up a MOPA at an early date; says he is getting a bit tired of the Hartley. 4RV, of Cunnamulla, reports that conditions suddenly took a turn for the better on 20 mx, and he states that the strength of signals was as good as he had ever heard at his QRA, countries worked being SM, PA, and several G's. 4GS and 4JN are both located on the 200 mx band. 4LS is now living at Toogoolawah, and expects to be on the air again very shortly. 4GK, of Wynnum, appears to have done well in the recent B.E.R.U. contest, having knocked up over 650 points during the senior contest. However, "Mac." had the misfortune to become ill during the first night of the contest, and was forced to have a spell. 4EL was heard quite a good deal on 20 mx during the B.E.R.U. contest, and certainly seemed to be getting his share of contacts. 4OB and 4EW both putting out good signals on 40 mx; also understand 4OB has been trying his luck on 20 mx.

On Sunday, February 25, further 56 mc tests were conducted by 4AW, 4GK and 4RY, and on this occasion two-way telephony was successfully established between 4AW, Nundah, and 4RY, who was using portable equipment and was located at Mt. Gravitt, approximately eleven miles from Nundah. The reports of signal

strength were R6-7 in each case, and both 100 per cent. copy. 4GK, of Wynnum, was also heard by 4RY at R6, but owing to skeds having been arranged on 40 mx by 4GK he was unable to continue after 10 a.m. However, further tests are being arranged, and the results will be published at a later date.

Cheerio, 73, Cul.

RY.

VK5 (SOUTH AUST.)

Conditions in VK5 up to March 22nd have been far from good for DX work. The recent heat waves have made the wearing of the cans almost unbearable even for short periods, with the result that the majority of the hams have been doing very little as regards DX. 40 metres is not as good as it was a few months ago, being at times very patchy. With the changing of the seasons the signals are coming in later now, EA's being particularly strong until 7.30 in the morning.

Sunday morning phone rag chews on 40 metres are becoming increasingly popular in VK5. The band is literally full of them, but it is pleasing to see the majority of them go back to CW before nightfall, instead of causing QRM with their phone. 5NR puts out quite a respectable sig, and among others who are usually heard are 5MV, 5KL. 5PS, 5HB, 5MF, 5FM, 5LP, 5MK, 5KG and 5DX.

The Transmitting Section held a meeting on March 14, when the annual election of officers took place. Those elected were:—Chairman, Gordon Ragless, 5GR; Secretary, Colin Howie, 5RF; Assistant Secretary and QSL Officer, George Luxon, 5RX. 5RX will also be Federal QSL Officer. It was with regret that the resignation of 5BJ as QSL officer was received. Bobbie had held the position for five years. In 5RX the section has a worthy successor, who can be relied upon to carry on the good work done by 5BJ.

5GO still continues to hear everything under the Heavyside Layer—SM. VP5, OH, D, etc. George has a particularly bad location, his aerial being almost buried in huge gum-trees. 5RX recently worked his forty-first country. George has been on 20 mostly, though occasionally he gives 40 a go. Hears plenty, ZT. ZS, SM, etc. Our electron coupled king, Bob Manuel, 5RT, went and got married a few weeks ago. The gang wish him all the best, though we expect that YF QRM will make him curtail a few of his experiments.

5KL, one of the many new chaps on the air, has changed over from self-excited to a two-stage xtal rig, using a 46 oscillator and a 45 p.a., with 16 watts input. Has been getting chirpy PDC reports, but hopes to rectify this as soon as he gets a separate power supply for each stage. Also been working ZL's on 20. 5MV, another new ham, has been rebuilding; with a Hartley with a 45 for the time, but hopes to go on crystal soon. 5JH, of Norwood, has been working SM, G, D, and other European DX lately. Vic. has now brought his number of countries up to 40.

5SU (ex 5MU) has not been doing much lately, except working W's on 20 in the morning. Our friend, Ted Kirby, from the Granites, Central Australia, paid us a flying visit the other night. His call is 5EK. Says VK3, 4 and 6 come through well up there, but VK5 and VK2 are very poor. 5EK is on every Sunday, and is always glad to QSO. 5BJ has not been doing much lately. Servicing BCL sets takes up quite a lot of Bobbie's time.

Harry Roberts, of 5MY, still continues to work fresh countries. His tally is now 41, including 25 this year. Harry puts out a good note from a three-stage xtal rig with an E406 as p.a. Had BCL trouble for awhile, but his has been fixed up now. 5NR, one of the most recent arrivals on the air in VK5, is doing well. Has worked 14 countries already on a four-stage crystal rig, and was recently QSO with six W's in three-quarters of an hour. Recently received R5 from a K6 on phone. 5JO is one of our most consistent stations. Works plenty of W, PK and J's. 5ML has deserted 40, and is spending all his time on his 200 metre phone transmissions on 1480 kc. 5MD is temporarily off the air on 40, because of a blown xtal.

5YK still continues to drag in plenty of DX on Saturday nights. Has no trouble in QSO-ing LA and other European DX. A single sig super is used, so no trouble is experienced in hearing them. Colin Howie, of 5RF. is one of our most enthusiastic new hams on the air.

Our staunch supporter of self-excited oscillators, 5LG, has changed

over to crystal control on 40. Leith "acquired" the famous 5RO crystal, and has been QRL rebuilding the rig into a rack and panel job. The note sounds fb, but since reading the note about him by "QRZ" in last month's "A.R." Leith has become key-conscious. Is saving up to take code practice from "QRZ." Hi! hi! hi! 5LG, bis second op, and 5RF are still trying to find out if they were sober on Christmas Eve. They certainly made a lot of noise in the city. 5WP still works early morning DX. Got R7 from XZN2C in the mid-Atlantic recently, and also has no trouble in QSO-ing FB, CT, and EA.

5RP has been off the air for some time. 5WR still snags DX occasionally, with a PDC note. Uses a 210 in a T.P.T.G. 5TX, our super QRP king, has one of the best notes on the air. 5FM has been having a holiday from DX. Had to pull out of the ARRL test because of punk conditions. The rig used at this station is a four-stage xtal with a 45 oscillator, 46, 46, and push pull E406.

Well, chaps, your scribe this month is the South Australian Editor himself. Geoff, 5ML, has been QRL lately, so I will be writing the notes for the next few months. I would like to see more dope on the country hams in these notes, so wake up, you chaps, and let me have some news.

Cheerio to all Interstate hams, and 73's from

ERIC HALLIDAY.

VK6 (WEST AUSTRALIA)

There was a good attendance of hams at the general meeting held at headquarters on March 15. Those present were JK, WM, SA, KR, CX, BN, CP. FG, RL, LJ, MN, BB, LK, and FT, also about a dozen associates.

After much discussion it was decided to co-operate with the radio traders at their exhibition to be held in April.

Circulars are being sent to all unfinancial members asking for immediate recognition of their liabilities.

The chairman reported that the A.O.P.C. classes were in good order and making excellent progress. Other business was systematically disposed of, and the meeting concluded with a detailed description of gear exhibited by members.

6BN exhibited and explained a receiver employing a 6F7 and 37 with a 171A as final stage.

6BB had a portable xmitter, also of sound construction and noted ability.

6SA exhibited a man-power DC generator made up of spare parts from motor cars, cinema machines, and what not, all put neatly together to produce 500 volts at 60 mils.

A hearty vote of thanks to exhibitors brought to a close a f.b. meeting.

6KP, of Meekatharra, was with us, and we wish him good luck and DX.

KP is a new addition to the ranks of VK6.

Conditions on all bands have been fairly quiet since last issue, and the few stickers have been hard pushed to get much DX.

In the evenings a few DX stations worked were AC PK KA and a Yank or two. Signals heard in the early morning are a few G's and W's, with an occasional Frenchman.

6KB, after trying to get a xtal rig perking with little success, has gone back to his Hartley, and at last has landed his first Yank.

KO has had a puncture on his MOPA. The Neut Condenser shorted and bang went his Electrolytics.

Quite a lot of the gang have gone antennae mad and pretty little lights can be seen on some of the sky wires. Among the disciples of 6MN are FG and RA. Those lights, boys, will correspond with any thumps your BCL friends might be getting. Hi!

6CP still keeps a nightly vigil, and can be heard up to 10 p.m. pounding CQ.

6LJ still QRL with QSL Bureau and cricket. Country hams 6FL, RW, FM. consistent, but where is 6RS?

Most other hams too hot and tired to pound brass, but let's hope cool weather will bring them back.

6HD often heard working locals on fone and CW.

Cannot hear any of our gang on the W. Test, and 6SA must be resting.

6AG very QRL with new station building at Northam, and JK QRL picking (winners?).

PUT AT END

Brother Hams, I seek your assistance. Station 6CP will be on the air on every Wednesday night for the receipt of your dope, also on Sundays.

73.

(Signed) C. R. COOKE,
VK6CP.

The shack meeting held at headquarters on March 1 was only mo-

derately attended, the cause being that some of our boys were making themselves familiar with broadcast station operation at 6PR.

By the time this reaches the press their fate will be in the hands of the P.M.G.'s examiners. Included among those sitting for the commercial are:—6KR, MU, MY, FT, and LK.

Despite the poor attendance at the above meeting an interesting rag took place, and some novelties were on show. Chief among these was a "Jack-in-the-box" code outfit, explained and exhibited by 6AG. 6BB had a tophole mega., and many envious looks were cast at the owner thereof. Most of the others told tall stories of their doings in the good old days of amateur radio bugs.

Members please note that shack meetings are held on the first Thursday, and general meetings on the third Thursday of each month.

VK7—TASMANIAN DIVISION

Another ARRL test has come and gone, and brought with it the usual terrific QRM. The severity of the QRM this time was due largely to the number of stations operating, and not so much to the quality. The broad channel-sweeping ICW signal was practically non-existent, nearly all W sigs being CC, although many of them sounded as though some filter in the finals would have been in order. The 7000 KC end of the band was just a living mass of signals, pounding through night after night in search of the elusive DX contact. All the W districts and VE 5's and 3's were easy to raise here. VE 2's, 4's, 8's and 9's were seldom heard.

The 40 MX band was the only band used to any extent, mx being very poor for W contacts just yet.

The conditions during the test in VIH were good, although one or two nights during the week it was found very hard to raise anything after about 11 o'clock.

At the 7300 KC end of the band VK3MR. 3OC, 2ZH, 5HG and ZL3CC and 2GN seemed to be getting a large number of contacts. The QRM at this end of the band was not nearly so severe, but gave an ample number of contacts with less "sri om pse rpt" stuff.

7JB, after several burn-outs, breakdowns, etc., managed to QSO quite a number, but thinks he would have done better had his xtal been abt 7280 KC's. Hopes to scrape a few layers off it, and be on that spot pretty soon.

The similarity between our calls, 7RC, OM, often had me tricked for a moment when the Yanks were coming back—only a dot the difference, what! Hi! Have the same trouble?

7BJ is a new ham with plenty of punch and key clicks. Worries 7JB plenty. Has a MOPA with about 70 watts on E406's in PP.

7KV made some changes in his antenna just prior to the test, and now QSO's Yanks with ease.

Well, QRN now, and C U next month. 73. 7NC.

VICTORIAN QSL BUREAU

Cards are on hand at the Victorian QSL Bureau, 23 Landale street, Box Hill, for the undermentioned stations, and will be forwarded on receipt of a stamped envelope:—BC, BF, BP, BR, CA, DP, DY, EG, ER, FB, FC, FM, GA, GU, GX, JL, JN, JW, JX, JY, KQ, LM, LP, MH, MQ, NC, NG, NR, OP, OX, OZ, PC, PK, PN, RN, RW, SK, WB, WK, WX, XQ, YR, YL, ZF, ZL, ZY.

VK2NR, who is shortly to leave on a trip to England, writes eulogising the efficacy of the Australian Qsl Bureaux.

VK2TB (late VK3RB), who is now on the operating personnel of 2UW, mentions that although his new call sign sounds a bit "consumptive" it manages to get across to W in good style.

The writer, while enjoying a tour of the far North-East of Victoria and the Goulburn Valley, called in on four different hams and found none of them at home. Evidently radio is not the only hobby of the country ham.

VK3WL has been recently blessed with another junior op, making the total three males and two yls. Guess in ten years' time station VK3WL should be on the air 24 hours in the day.

While on the subject of junior ops, my worthy colleague, VK2YC, QSL manager for VK2, complains that the qrm caused by his newly-arrived heir has effectively stifled his 28 MC inclinations.

VK3RJ, Qsl Manager.

R.A.A.F. Wireless Reserve Notes

VMC

Total No. of Messages 551

Average per Station 26

VMC4

Total No. of Messages 214

Average per Station 35.5

3D1

Total No. of Messages 105

Federal Notes by the C.O.

There are two stories to be told concerning the Reserve's co-operation activities during the last month.

Firstly, the R.A.A.F. sent a flight of Wapitis, Bulldogs and a Southampton over to Tasmania to attend the various pageants. This called for continuous communication between the mainland and the island, and also between the North and South cities of VMG. The organisation and work done by 7Z1 and his members was excellent. Daily watches were kept with 1A1, and a chain of communications was opened all around Tasmania for advanced weather reports and landing ground information, etc. As usual, on the day of departure, the flight was supplied with an up-to-date weather report from Launceston. The watch between 7Z1 and 1A1 was timed for 0700 hours, and at 0750 hours, after trying all bands available, 1A1 became a trifle uneasy. as the machines were due to leave at 0800. A call in desperation brought 7Z2 on the air, and the weather report went through in time. It was not until the following night that 7Z1 reported that his power had been off, and was unable to answer 1A1's many calls! We must look into this emergency power supply business. The Reserve is an emergency body, and as such it must be prepared for occasions such as this at any time. We might ask our editor to publish full details on the construction of suitable equipment!

As an example of where stand-by equipment may prove of value lies in the second story. Three Moth aircraft recently left Point Cook for a night flight to Adelaide via Ballarat, Stawell. Nhill and Cook's Plains, landing at Parafield (S.A.). If there were an occasion when the Reserve was most needed this was certainly one. To be able to fly to Ballarat, land, receive a weather report from Stawell, have someone to radio a report-on-arrival message back to a squadron and forward any instructions to the next stopping place is a part of the service that the Reserve rendered on this unique occasion. It was an opportunity that comes once in a while. All Western VMC reservists were on the job, and in conjunction with 5Z1 contacted 1A1 throughout the flight. Messages received at 1A1 were sent direct to the Squadron via VJP. The perseverance of those who took part is to be marvelled at. 3C3, 3B3, 3A4, 5Z1 and others showed intense interest and enthusiasm by staying up nearly all night to see the job through. However, the details of the flight must be left to the D/C's to write up, as they made the arrangements, and will probably have a few side-lights to relate.

Could this co-operation have been a success if the stations were without power?

THIRD DISTRICT NOTES.

By 3Z1-VK3UK.

The Reserve officially commenced work on the 1st March, but as the organisation has been complete here in Victoria for some time general work and schedules have proceeded just as usual.

The main news of interest this month was a co-operative stunt with three RAAF Moths that carried out a training flight. by night, to Adelaide and back. on the nights of the 5th and 7th March. The machines did not carry W/T, but were equipped for

lamp signalling. Only the stations directly on the route, 3A4, 3C3, 3B3 and 3E3, co-operated actively. However, in case the planes had to deviate from their course, 3D1, 3D2, 3D3 and 3A5 stood by on the first evening. 3A4, who is situated at Ballarat, met the machines on arrival, and handed the O/C Flight weather reports, and all traffic that had come through for him. The other stations not situated at any of the scheduled landing points but had emergency landing grounds, arranged for them to be lit in case they were needed. 3C3 lit a bonfire and had half the local fire brigade equipment ready in case the wind arose and set the surrounding grass alight. 3A5 and 3D2 did not risk a fire, but ran a truck out on to their ground and turned the headlamps aloft. In each case these stations put a key in series with a spotlight to signal a position report to the machines as they passed overhead. The idea was that the station should receive an O.K. from the planes and then immediately send a report by radio to 1A1, where 1A1 and 3Z1 were standing by. On the trip over, as the planes flew a compass course, they passed north of all the stations, but on the return flight they flew down the main railway line, and thus passed over each of the co-operating Reserve stations.

Now, it can be realised that, for a Reserve station to be of 100 per cent. usefulness, it must possess an operator of resource and initiative, as well as an experienced traffic handler. This was amply proved on the return flight, when the planes were believed to be overdue. A short call acquainted 3C3 with the position, and he immediately tried to ring Nhill to see if they had arrived there safely. However, the Stawell exchange closes at 2200 hours, so he called up 3B3, who dashed into Stawell in his car, roused the exchange operator from bed, and put 3C3 through to Nhill! It was learned that two machines had arrived, but nothing was known of the third one. Although the time was well past midnight, the owner of the drome. Mr. Young, obligingly went out and phoned through the news that all three machines had come in. They had been delayed by strong headwinds. 3A4 got no sleep at all that night, and, although a comparatively new station. put through all traffic in a machine-like manner. On him devolved the responsibility of arranging for the street lights to be left on at Laverton, as well as the collection of weather reports and traffic for the machines.

From the Reserve point of view the stunt was very successful, and was a concrete example not only of the efficiency and enthusiasm of all stations concerned, but also of their initiative.

It will be noticed that VMC traffic totals are considerably smaller this month than either of the two preceding months. The reason for this is partly that a number of stations have been away on holidays, but more because we are now settling down to a routine traffic flow. The handling of a certain amount of traffic is absolutely essential for the maintenance of efficiency, but handling excesses is one of the surest ways of stifling enthusiasm. When the monthly contests started in January we wanted to show what we could handle in a month, but now, as no useful purpose can be gained, we are only handling essential RAAF messages, plus traffic dealing within our own domestic organisation. Any station should be able to maintain 100 per cent. efficiency by handling the equivalent of one message per day, so our aim is to average about 30 messages per station per month. Thus the handling of traffic will always be a real pleasure and never a drudgery.

FOURTH DISTRICT NOTES.

By 7Z1-7RC.

Conditions generally have improved in VMD during the past month, old man static having taken a back seat for a while, and allowed easier contacts. One disadvantage as far as 4ZL is concerned is the sudden appearance of a bad power leak background of R4 strength, which is very persistent and creating some concern.

The number of members keeping regular watches has gradually increased during the last three watches, and it is hoped continues to do so. Quite a few of those interested, and not already enlisted, have returned reports acknowledging reception of both the 4155 kcs and 6555 kcs Sunday broadcasts' good readability.

4GA recently put in an appearance at the conclusion of a watch, with a few "B" batteries and a 201A. He promises to be a regular watch keeper

after being off the air for several years.

4B2 finds the watches interfere with his BCL broadcasts, so is trying to alter them, i.e., the BCL bdcsts.

4B1 is still off, as no AC available yet, and "B" batts rather costly items.

Several new members are awaiting their section and call sign allocations, which require careful allotting in VMD, as most members are separated by very great distances, and in order to provide reliable inter-section contacts.

Traffic Totals.

4A4, 8; 4DR, 2; 4JM, 1.

FIFTH DISTRICT NOTES.

By 5Z1 (5SU ex-5MU).

Following the resignation of 5MB as D/C, the Reserve is being reorganised in this State. Reserve calls have been issued to five members, whose enrolment has been confirmed, while seven other applications are before the Air Board, with bright prospects of many more to follow.

Regular watches are being maintained by 5Z1 on 6555 kcs., and all districts can be heard at good strength during the mid-week watches.

The recent night flight between Melbourne and Adeladie was of great interest, and traffic for both ends was handled by means of regular schedules with 1A1 throughout the flight.

Weekly broadcasts are to be given each Sunday on 3.5 mc between 9 and 10 a.m.

5B2 is busy building his receiver, while 5A4 has struck trouble with the local power company, who keep him short of watts for many hours each day. 5A2 is using SE. while 1A1 is redesigning his CC transmitter.

Since the sections are not yet working regularly, the notes for this month are not very comprehensive, but it is anticipated that two sections will be active by the time these notes are published, and that the members will have found the strange procedure second nature to them.

SIXTH DISTRICT NOTES.

By 6Z1-6MN.

Several new applications have been received from country stations this month, who show desire to join up in VMF. A change in training frequency will be made after Easter and all stations will work on 80 metres. This has been proved necessary, as the conditions over here do not permit 100 per cent. working all around the State on the higher frequencies. It is realised that this band requires only low power, and is ideal for domestic work at all times. Nothing has been heard of 6BO and 6FM lately, but it is understood that they are pretty busy, but will be again shortly. 6FL is shifting to Albany, and will be heard from that QRA as soon as the stick is up. 6Z1 has debunked crystal control in favour of an electron coupled-all-wave oscillator. 6FO is shaping well, and maintains watches with 5Z1 for relays. We hope to have official calls allotted soon, and finally get things under way. At present there are four very active and efficient metropolitan stations keeping regular watches. 6LJ is also rebuilding.

Traffic Returns.

6Z1, 27; 6Z2, 32.

SEVENTH DISTRICT NOTES.

(By 7Z1-VK7RC.)

The official commencement of training in VMG has not started very well, Members, for various reasons being otherwise engaged, are unable to devote the time to Reserve work that they would like.

VMG1 has received a setback. due to the loss of 7A3, who has left VMG for Melbourne to reside. I am sure that all VMG members will join with me in wishing 7A3 the best of luck in his new sphere. Although only a newcomer on the air, 7A3 had shown an example that could well be followed by other stations.

7A1 is holidaying at St. Helens, and has missed with his monthly report, and traffic total.

7A2 has kept a few schedules for traffic handling, but circumstances have not permitted a great deal of traffic to be sent.

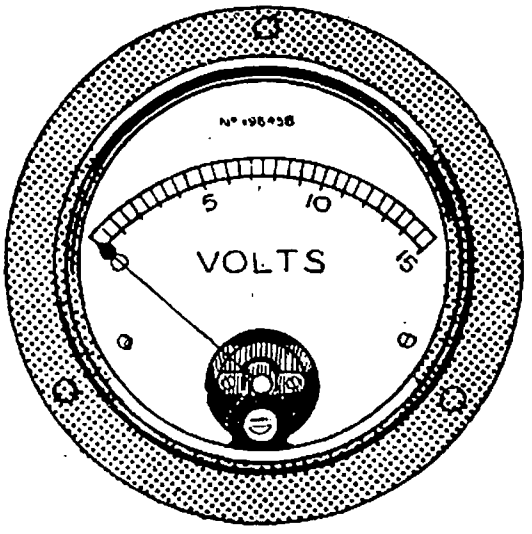
The main item of interest for the month was the visit of a squadron of planes from VMC. Although a Reserve station was made available at each town visited by the planes, except one, very little traffic was put through for them.

The weekly B/C is now given to all members by the D/C on Wednesday night. Thus the news is received from 1A1 and given to all members a few minutes later on 3.5 MC.

7B1 reports some new enrolments in the South, and hopes to have VMG2 working shortly.

Traffic Totals for March.

7A1, 34; 7A2, 43; 7A3, 14; 7LZ, 7; 7Z1, 39.



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INDEX

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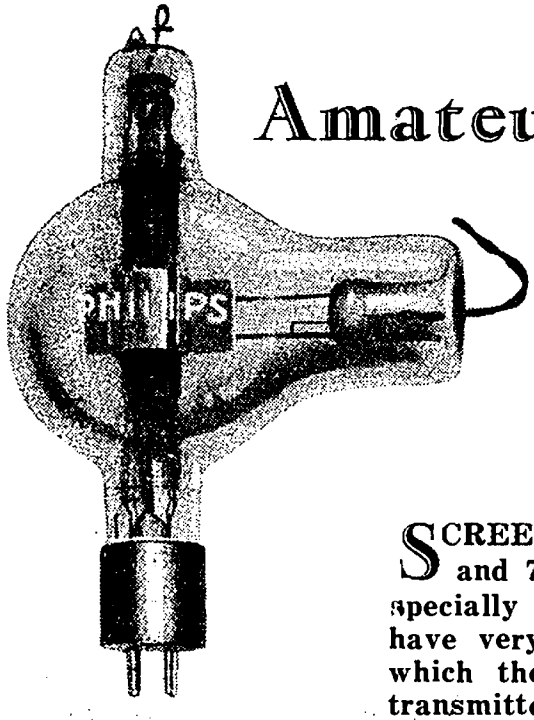
Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

Screen Grid Valves
For
Amateur Transmitters



¾ of actual size.

Types:
QB 2/75, QC 05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A. Type.	Screen Grid Valves. QC 05/15.	QB 2/75
Filament voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2.000
Anode voltage	400-500	1000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	2.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam of bulb	50	70
Max. length	160	210

*Approximate values.

PHILIPS
TRANSMITTING VALVES

EDITORIAL

Now that "Amateur Radio" has been in existence some months, and the machinery of organisation is running smoothly, we have an opportunity of looking around in order to see how best we can improve the general standard of our magazine. We are modestly proud of "Amateur Radio" as it is, but our policy, as surely every live institution's should be, is one of progression, and so we are seeking ways of improving our product.

A periodical such as ours can be divided into five sections for the purpose of analysis, when one is considering, as we are, a general improvement throughout its pages:—

1. Technical Articles.
2. Divisional Notes.
3. Advertisements.
4. Circulation.
5. Compilation.

On studying these five sections, it can be seen that only the fifth is a specialised job which can be done solely by the men in the city of production. All other sections are general and Interstate in character, and to preserve the federal nature of our magazine it is essential that each division feels an equal responsibility in the collection of "meat" for the pages.

Briefly examining each of these four sections, a word about each will not be out of place. The notes which are sent in monthly by all divisions leave nothing to be desired, either in quality or quantity. It would be no exaggeration to say that we could easily fill 50 pages a month with the interesting, readable notes which come in from all parts of the Commonwealth. Quite frequently half of the notes sent in have to be cut in order to give everyone fair representation in the pages. The amount of space allotted to each division's notes is in direct proportion to the circulation of that division. Thus every ham can see that, if he desires more of his own division's notes each month, the remedy is in his own hands to help to increase his State's circulation.

The magazine must be a commercially paying proposition, and in consequence it is impossible to enlarge its pages without a coincident increase in advertisements and/or circulation. Every ham in Australia should be a subscriber to his own magazine, which is produced for him and in his own interests. We are leaving no stone unturned in Victoria to see that every licensed amateur is a subscriber—are all other divisions doing the same?

With regard to technical articles, we venture to say that there is not a ham who has not introduced some feature, however big or small, into his station which would not make interesting reading. To preserve the federal character in the pages we don't want articles from VK3 all the time. Write up a description of that new receiver, transmitter, or unusual piece of gear and let us do the rest.

Finally, regarding the compilation of the magazine, we have gone into the subject very closely, and have many new ideas and features. Our readers will, no doubt, notice these immediately they appear. Criticism and constructive ideas are not only welcome, but are essential if our policy of progression is to be faithfully carried out. We want to feel, as we want every reader to feel, that each issue is a decided improvement upon its predecessor. This is an all-Australian job. How about it?

Frequency

By "VK3ML."

In common amateur practice there are three types of doubling systems employed—(a) plate distortion, (b) grid distortion, (c) unbalanced push-pull. The three cannot be mixed in any manner. Let us consider the plate current-grid voltage curve of a single-ended amplifier for a moment. Under ideal conditions, and assuming we apply a pure sine wave to the grid we can expect an identical output in the plate circuit, and the plate current will be working on the straight portion of its curve. The output will show a linear relation between grid voltage and plate current. Under these circumstances we could not expect to obtain any harmonics generated in the tank circuit. Now, as we already know, a high grid bias on a tube presents distortion in the output. Consequently, if to the grid of this tube we apply a high negative DC voltage, more than is required for a complete cut-off, but still maintaining a pure sine wave on the grid, we find that the output has changed completely. It ceases to bear a relation to the input, that is, the linear grid voltage-plate current curve has been completely cut up and "humps" appear. This has produced our harmonics. The output is represented somewhat in Fig. 4 under VI. If we offer a high impedance to the harmonic desired in the plate circuit we then have a voltage set up in that tank. This explains the reason for the necessity of a high L in doubler tanks. The higher the L, the greater the impedance, and consequently the greater the voltage developed.

The foregoing describes, briefly, the action of a plate-distortion doubler-amplifier. That is, where we employ a pure, or nearly pure, sine wave, to the grid of the multiplying tube, biassed beyond cutoff, and collect the desired harmonic output in the plate tank. This stage should be operated at as high a plate voltage as the components will permit, with sufficient bias to keep the tube cool. In order to obtain this nearly pure sine wave it is necessary to apply a harmonic free signal from the oscillator or preceding stage. This is best obtained by using a fairly high C in the CO stage, and by adjusting the bias on that stage for maximum fundamental output. Naturally, under these conditions there should be an absence of grid current, or very little present, in the doubler. If any be present then something is wrong or the tube is acting as a grid distortion amplifier doubler.

It would seem that many of F.D.'s now employed act under this system. Should your doubler be full of self-oscillation then you may assume, with fair certainty, that you are bordering on this type. For its function a grid distortion amplifier requires non-linearity between grid current and grid voltage. Whenever the grid voltage is allowed to run positive one must always expect a grid current to flow. Now, this grid current is not a steady flow; it comes in impulses, and is therefore rich in harmonics. Consequently, if a high impedance to the desired harmonic is inserted in the grid circuit of the doubler, in the form of a tuned tank then a voltage will be set up across it. Now, if the plate tank is tuned to the same harmonic frequency, the tube works as an ordinary amplifier. Should the grid and plate circuits be tuned to the same frequency, it is obvious that, unless neutralisation is employed, one must expect self-oscillation. That is where so much self oscillation in F.D. stages can come from. The only remedy would be to neutralise the stage, which, by the way, is advantageous in any doubler system, or by adopting the plate distortion system entirely, in which the grid and plate circuits are working at different frequencies. To prove which system one is using just place a milliammeter in the grid circuit of the F.D.; if grid current is present, then the tube is certainly not acting as a plate distortion doubler.

Fig. 1 shows a typical inductively coupled amplifier working as a plate distortion one. The grid is tuned to the fundamental of the previous stage, and the output to the desired harmonic. Fig. 2 depicts a commonly used CO hookup and doubler, whose operation a few years ago gave rise

to much discussion. Surely this circuit is a good example of grid distortion. The fundamental of the oscillator is tuned by the C, and that part of the L across it. The top part of L, untuned, is offering maximum impedance to the harmonic, and consequently sets up a voltage at the harmonic frequency in an auto-transformer fashion. This is applied to the grid of the doubler, and the plate is tuned to the same frequency; hence a grid distortion amplifier, making available many snags, self-oscillation, etc. However, the two systems are only single-ended amplifiers, and consequently one could not expect an efficiency of much over 25 per cent. This leads to the possibilities of push-pull doubler systems.

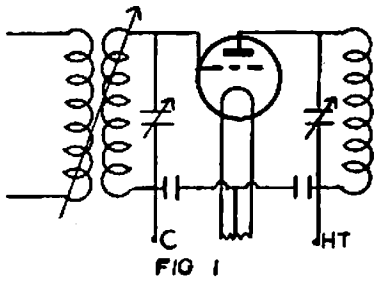


FIG 1

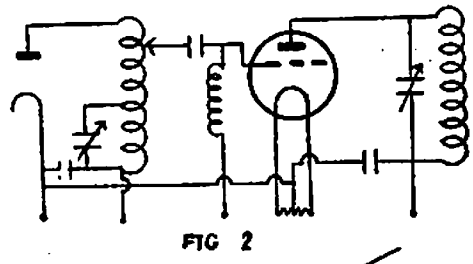


FIG 2

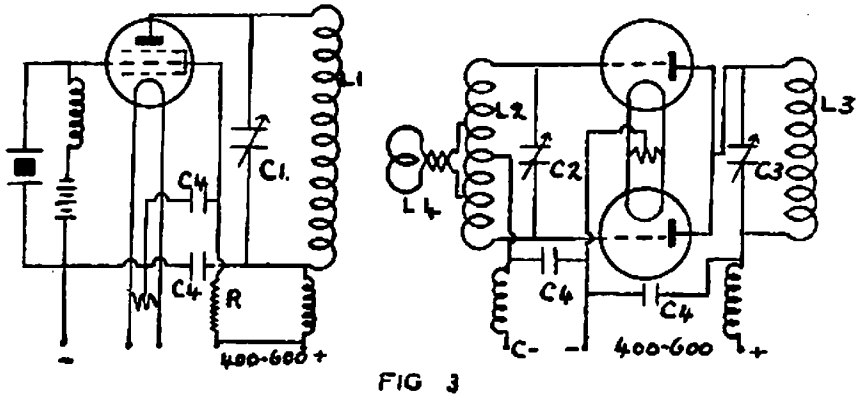


FIG 3

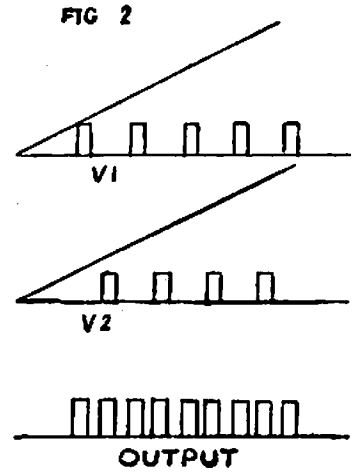


FIG 4

It is a well-known fact that push-pull amplifiers are of little or no value when it comes to frequency. Of course, they are most desirable for tripling or odd harmonic multiplication. But for average ham use we need the second harmonic. It is not intended to wade into the theory of push-pull here, but let it be said that the absence of even harmonics in the output of such a stage is due to the differential arrangement of the two tubes, and the impulse from the second valve is always in such a phase as to prevent them. However, once a P.P. stage loses its symmetry its value as an even harmonic free amplifier is gone. As soon as one unbalances a carefully balanced P.P. arrangement the story, from the point of view of frequency doubling, is a different one. In the case of a single-ended amplifier doubler the plate receives an impulse only on every other cycle. Now assume we have two tubes, the grids connected in P.P. and biassed to slightly beyond cut-off, and the outputs connected in parallel, as in Fig. 3. Here we have a common plate tank receiving an impulse every cycle of its swing. This is illustrated in Fig. 4, V1 and V2 representing the two tubes and the output is shown as a combination of both. This produces full wave rectification, and offers an infinitely better doubling system than a single-ended stage. However, this system is only to be recommended for the lower frequencies and not the highs, because when the balance of the push-pull has been lost the efficiency drops off. Another and better method of unbalancing push-pull, which is very suitable for high frequencies, is to simply disconnect the filament lead of one of the tubes in a pure push-puli circuit. The

same would be arrived at by using a burned-out tube in one of the sockets. By doing this the balance and symmetry of the stage is fairly even. However, for the popular frequency bands the parallel plate system is to be recommended. Fig. 3 shows a completely wired up transmitter using a penthode as oscillator and two "whatever you like" tubes in the doubler stage. 210, TCO4/10, E443, etc., tubes are suitable. The high mu tubes are preferable as doublers at any time. The operation is very simple, seeing that no neutralisation is required. Matched impedance line coupling is finding value in hamdom these days, and has much to be recommended. With it one can obtain power outputs that far exceed those obtainable with capacity coupling. Should a neutralised amplifier be added to this doubler it is suggested that feed line coupling be used again. However, a pair of 210s or E443s in the doubling stage and connected directly to the aerial will provide a ham with as much power as our licence will permit. Simplicity and easy operation is thereby obtained. Although not shown here, the oscillator could be of the electron coupled type, or, better still, of the harmonic oscillator CC type, as described in the November issue. With either system a fine all-band transmitter could be built at a very small cost.

The operation and tuning of the push-pull doubler stage is certainly not complicated. The aid of a grid milliammeter is desirable when tuning up with the matched impedance line feed system. One reading 0-10 or 0-25 mas will do. Tune the C.O. stage to maximum output firstly, and then couple the two turn feed coil loosely to the cold end of the oscillator tank coil. The ends of L4 are connected each one or two turns from the centre of L2. Retune C1, and transfer the power to the doubler by tuning C2 until the grid current shows maximum. A combination of coupling and tapping of L4 into L2 will give maximum drive. Increase the bias on the doubler stage to a little more than cut off and apply the H.T. Then the rest is simple. Tune C3 until the harmonic required shows up in the tank. The aerial could be connected to the top end of L3, or another feed line attached to an amplifier stage.

Little trouble should be encountered in the operation of the doubler stage. The most likely to be met with would be self-oscillation, or, rather, parasitic oscillations. These can be overcome by inserting small chokes of 5 or 6 turns in each grid lead. Remember to keep the plate connections as short as possible for greatest efficiency. If it is desired to operate the push-pull stage as an amplifier of the fundamental input it is only necessary to change the plate connections over to push-pull and neutralise in the conventional way, that is, with condensers across from the grid of one tube to the plate of the other. As a pure doubler the constants listed below are used when multiplying a 3.5 mc crystal to 7 mc.

L2 30 turns 18 gauge on a 2½ in. former.

L3 16 turns ¼ in. copper tube 2½ in. diam.

L4 2 turns 18 gauge on a 3 in. former coupled with flex to L2.

C2 and C3 100 mfd.

C4 0.01 mfd.

R 50-100,000 ohms according to type of tube used.

DIRECTIONAL AERIALS.

By "VK3ML," Tech. Editor.

The following figures should prove invaluable to those who are experimenting with directional aerials. especially on 56 and 28 mcs. These compass bearings are accurate to within one degree wher used around Melbourne. Other States will have to allow slightly for their position.

These figures are hard to procure, and should be treasured. We are indebted to the Air Board for this information.

Melbourne to—

Calcutta, 300 deg.
Ceylon, 284 deg.
Cape Town, 212 deg.
Cairo, 276 deg.
London, 129 deg., by S.E. route.
London, 309 deg., by N.W. route.
Berlin, 306 deg.
Vancouver, 38 deg.
Hong Kong, 320 deg.
Wellington. 100 deg.
Equador (Quito). 111 deg.
Buenos Aires, 148 deg.
California (Los Angeles), 55 deg.
New York, 60 deg.
Montreal (Quebec), 51 deg.

Your Transmitter for the Centenary

By VK3WL.

Although we have ventured the opinion that the transmitter is the least important item of our equipment, we must not lose sight of the fact that it supplies the energy to our most important unit, "the antennae." The chain is only as strong as its weakest link, therefore, we have to decide on a really efficient transmitter. Shall it be controlled or self-excited? Personally, I took quite a lot of convincing of the superiority of the crystal-controlled transmitter. Purity of signal and cleanness of note are pleasing and advantageous, but my main interest is the ability of a station to produce field-strength at really DX ranges, and from that angle I say, after years of testing and experiment, to those in doubt S.E. or C.C.? The sooner you forget about S.E. the better for all concerned. I do think the P.M.G.'s Department could well make controlled transmitters compulsory mainly for the protection of misguided hams. Such action would save us all the agony of listening to some of those strange noises which are often reported "FB to copy OM." If you and I gave nothing but honest reports for 12 months and handed out the T2, 3, 4 and 7's deserved I feel quite sure the necessity for doing so would disappear in miraculous fashion. Personal pride would kill them rapidly. Yes, our transmitter must be crystal or "tritet" controlled if peak efficiency is to be gotten. The oscillator circuit generally known as "the tritet" has to my mind one serious disability; 350 volts is about the maximum plate volts that may be used if the crystal is to have a life greater than a few hours. Analysed "the tritet" 59 is really an oscillator and amplifier in the one tube, and as such it carries the disadvantages of the low plate potentials permissible with a three electrode tube used as an xtal oscillator. The type 47 Pentrode is without a peer in this role. Experiment here has shown that a 59 tube in a "tritet" hook up most certainly does produce stronger harmonics beyond the first than does a conventional circuited 47, but I have not been able to make it replace the conventional two stages. I found that a "tritet" 59 at 350 volts followed by a 59 amplifier at 500 volts produced only about 5 per cent. better grid current in the P.A. than the conventional 47 CO at 500 volts, and 210 or 46 doubler at 500 volts, and the "tritet" arrangement required quite a few extra gadgets. If you wish to finish up on ten or five metres with a 7 or 3.5 MC crystal the tritet most decidedly, otherwise think it over. I did, and hence the TX as above.

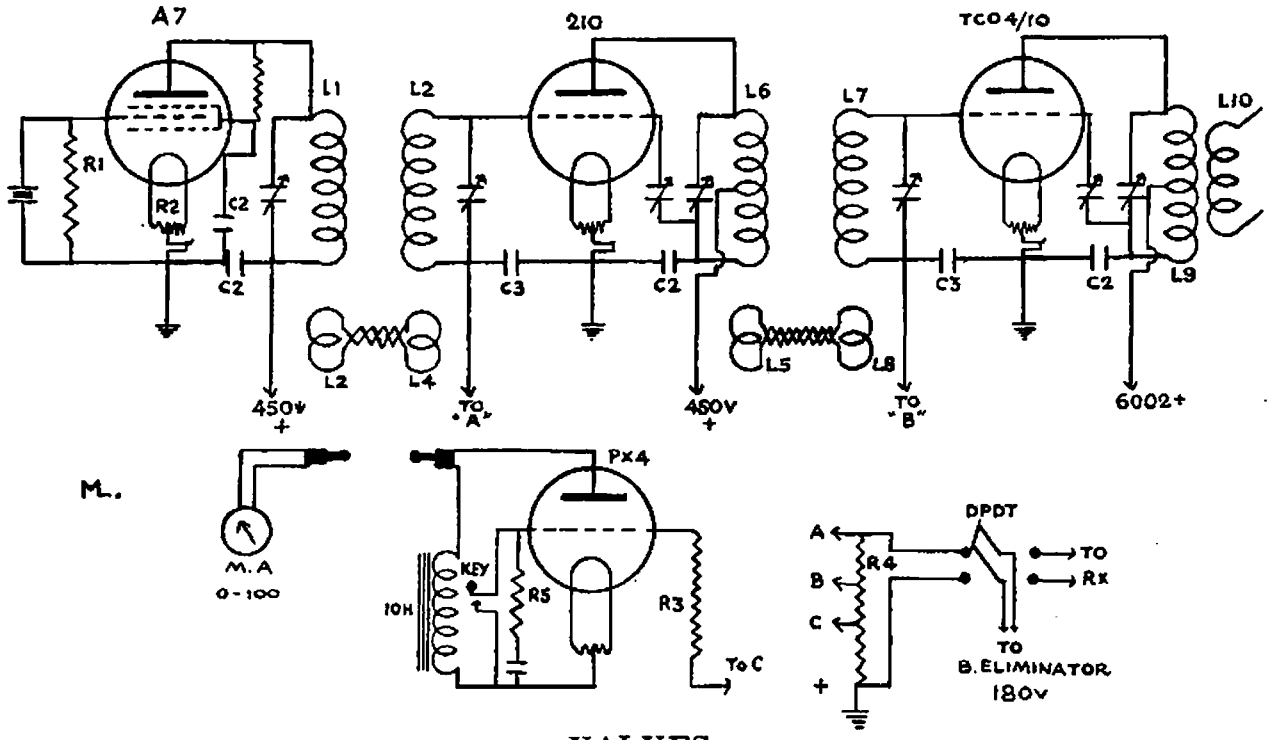
Link-Coupling.

Link-coupling once tried comes to stay. Substitution of link coupling between stages in my transmitter for the old capacitative coupling increased the grid current in the P.A. 30 per cent. Who needs further argument. With link couplings all we need in extra gear is a couple of marguis or other home-made plug in coil forms, a couple of sockets, and a couple of 8 or 10 plate midget variable condensers. Then we may throw those bothersome little chaps, the grid RF chokes into the junk box. Who ever wound a grid RF choke that did choke? I never could. Link coupling confines the stray capacities associated with each tube to its own circuit, and as a result we may increase our L/C ratios in each stage, and thereby obtain greater efficiency, and eventually more RF where it does business. Another great advantage of link coupling is the fact that the excitation can be varied from zero to maximum by swinging the grid tuning condenser through to resonance. Just such a gadget is badly needed by the majority of our fone stations. Driving the grid of the PA or modulated stage in a fone transmitter positive with respect to the filament means grid current, and grid current means distortion. With link coupling as depicted we have a vernier control of excitation in our PA or other stages. Shorting out the grid bias on the PA with the exciter stages switched off and normal plate volts on will give a reading on the PA plate meter which represents zero grid bias. The plate current reading thus obtained should not be exceeded in a fone transmitter if quality or depth is desired. It has been shown that greater excitation naturally must introduce distortion,

but more important to us DX chasers, it decreases the range of our fone.

Adjustment.

A MA meter is the only component necessary for the adjustment of link coupling to give maximum results. Inductances L1 and L2, L3 and L4, L5 and L6, and L7 and L8 may be wound on the same former, or otherwise tightly coupled to suit individual lay-outs. The line between each stage may be a piece of twisted lamp flex. I have tried lengths up to five yards at 14MC without any apparent losses. This is a great convenience with the multi-stage and rack type transmitters, as by means of jacks wired up to the link coils and wander cords the output from any one stage may be plugged into any other desired stage at will. For instance, in a four stage TX the output of the CO stage could be plugged direct to the final PA stage to drive the PA on the crystal's fundamental frequency. It also allows of greater physical separation of stages, which same, by the way, is the most efficient shielding available. Having wound coils which will resonate at the desired frequencies for each stage we must proceed to determine what turn ratios are best for our transmitter. The values given have proved satisfactory in my case, though they are not by any means finalised as yet, but could be taken for a starter. Once the tube to be driven is neutralised and its plate circuit tuned to approximate resonance, the coupling between the driver and driven stages can be adjusted for maximum transfer of power from the plate circuit of the driver to the grid circuit of the driven stage. To do this it is necessary to measure the rectified grid current in the driven tube. A milliameter should be inserted in the grid bias lead (for instance, between A and A in the accompanying diagram). The plate voltage is then removed from the driven tube and we proceed in our en-



VALUES.

C1 .001.
C2 .002.
C3 .00025.
R1 50,000 ohms 1 watt.
R2 20 ohms C T filament restr.
R3 100,000 ohm 1 watt.
R4 25,000 ohm wire wound V.D.
R5 20,000 ohm 1 watt.
LI 20 turns 20 SWG CC on 3 inch.
L2 3 turns 20 SWG CC on 3 inch.
L3 18 turns 20 SWG CC on 3 inch.
L4 3 turns 20 SWG CC on 3 inch.
L5 3 turns 20 SWG CC on 3 inch.
L6 11 turns 12 SWG on 3 inch.
L7 18 turns 22 SWG CC on 1 inch.
L8 4 turns 22 SWG CC on 1 inch.
14MC 9 turns of 8 SWG 3½ inch.
L9 7MC 18 turns of 8 SWG 3½ inch.
3.5MC 18 turns of 8 SWG 3½ in.
L10 7 turns of 3-16 copper tube 4 in.

deavour to increase the reading of rectified grid current in the grid circuit, as the grid tuning is brought into resonance the grid mills will rise from zero to the maximum obtainable. With a given ratio these adjustments give plenty of scope for experiment. Having satisfied ourselves with results on the first stage, plate voltage may be applied and the stage efficiently tuned. Then we move on to the next stage and repeat the process there. The final results will surprise anyone who has been using the conventional capacitative coupling. A few minutes' contemplation of the circuit should be sufficient to show why this is so.

Grid Bias.

The grid bias for all tubes in my transmitter, including keyer tube, is taken from a voltage divider on transmitter frame. This is powered by an 180 volt Philips "B" eliminator, which is switched from receiver to bias divider by means of a double pole double throw switch. This arrangement has been highly satisfactory here, but should not be used in a really QRO transmitter for the very good reason that the potentials which build up across the divider by the flow of rectified grid current from the various stages through it may easily rise to a value sufficient to ruin the aforesaid eliminator, and also failing that to overbias preceding stages. But I have found the arrangement in every way satisfactory here with inputs of the order of 50/60 watts, and a little extra bias on the 210 FD stage is all to the good, anyway. If you have a similar eliminator and decide to change over to this method be careful that the positive of the "C" bias circuit of the eliminator is in no way connected to the transmitter (this is quite easily done). Look the circuit over and you will readily see how it can quickly burn up your receiver tubes.

Keying and Key Click Elimination.

I am one of those unfortunates who ive in the midst of the BCL's that are BCL's who expect maximum return for minimum equipment and expense. With result that if I would work during the usual broadcasting hours practical perfection in clickless keying is essential. The system here shown has proved the best of the very many used here, and I feel moved to say if this circuit in your CO stage does not clear up any trouble curable at the transmitter end give up radio and devote your energies to horticulture. Osram PX4 is a highly suitable, and the cheapest tube obtainable for this job, as its impedance is only roughly 1000 ohms, and it is rated to pass 60MA; for these reasons alone it is superior to the 45 type. If the current of the stage to be keyed is greater than 60MA two or three of these tubes may be paralleled. The grid bias tapping for the PX4 is varied on the voltage divider until plate current in the keyed stage falls to zero with the key open. When the key is closed the grid bias on PX4 is shorted out in series with 100,000 ohm carborundum resistor R3. The current from the divider through this resistor is the only current you break, and is well below one mil. Even this without a spark suppressor arrangement was sufficient to produce clicks in one set long after they had disappeared in an xtal receiver in my own house, but the shunting of one MFD timed by a 20,000 ohm resistor (which values were experimentally determined upon) across the key break finally solved the problem nicely. By means of the plug and jacks in centre tap of each tube any stage may be keyed as desired. Care should be taken that the plate of the keyer tube is taken to the filament resistor, as current only flows from plate to filament in any tube; some people even forget this. The sole MA meter of the station may also be plugged into any stage at will, and also into the grid returns to measure grid current. Jacks are cheap at most junk stores.

Tuning the Power Amplifier.

The method of tuning the PA tank circuit when tightly coupled to the antenna with the popular zepp feeders' system is the subject of much argument amongst many hams. A method alleged to be the correct one is to open the antenna circuit and tune the PA with full plate voltage and excitation to the lowest plate current reading possible, then the antenna circuit is closed, or feeders attached to coupling coil and the feeders are tuned until maximum allowable or possible plate current is gotten. The rise from 15 or 20MA to 80 to 90 MA is then alleged to represent approximately the power fed to the antenna. There is no doubt that this method is not the best one, and that the PA tank is actually detuned as the antenna is brought into resonance with it, and that with this method the loading of our PA plate is anything but efficient. The foregoing naturally assumed that the coupling between PA tank and antenna coupling inductance is reason-

ably tight. If the coupling was sufficiently loose this method would be O.K., but such coupling would give poor energy transfer to the antenna, and would not be justified in the average ham station. A better method is to use the first-mentioned method up to the point where we obtained the max. plate mills, then the PA tuning condenser should be slowly rotated until the plate mills fall to a minimum value (all other adjustments remaining untouched); as the plate mills fall to minimum obtainable it will be observed that the antenna feeder current will rise. When this point is reached we will have slightly detuned our antenna circuit, and a further slight adjustment there is called for. These slight alterations should be continued and the antenna feeder current kept under constant observation. The tuning adjustment which gives greatest feeder current will be found to be the one which gives the lowest plate mills and represents the point where the greatest amount of energy is being transferred to the antenna. Metres indicators at centre of antenna and reports from known reliable DX stations who were assisting in and aware of the tests have confirmed this. Do not be deluded into comparisons with other stations by comparing feeder currents gotten by each. Feeder current of itself means very little. A station with an antenna having twice the radiation resistance of your own will probably only be able to show approximately half the feeder current that you can, power inputs and adjustments being similar. But he will probably get twice or more the field-strengths at DX ranges. But an increase in feeder current, all other factors being the same, certainly does mean things, and should be aimed at if maximum efficiency is desired.

Power Amplifier Tubes.

Perhaps a little talk on desirable tubes for the PA will not be out of place here. I am indebted to several reliable people, including Philips' and P.M.G.'s research department, for some of the information hereunder. But opinions expressed are my own. I use a type 210 as F D because I have it available. Type 46 is in every way its equal, but not its superior. Type 47 has hardly equalled either in FD stage, but is very little inferior. As a crystal oscillator tube, 47 stands alone. It will stand no end of abuse, and appears to be an unkillable tube. The line up of my transmitter should be an excellent exciter for one of the big tubes. Even 211 or 203A should do fairly well with such an exciter behind it. For the PA my dream tube is a Philips QB2/75, a screen grid amplifier having a maximum plate dissipation on test of 100 watts and a saturation current of 2 amperes. It requires a plate potential of 2000 volts at a current which should never exceed 100 mills. The screen grid voltage, which is 300-500 volts, should preferably come from the same source as the plate voltage. This practice will avoid chances of disagreeable behaviour. This tube is largely used, almost exclusively in the better "B" class stations as sub stage, and is also used by a few fortunate hams, but it works to peak efficiency at 2000 volts at about 100MA, which values cannot be exceeded if long life is to be expected. But at these values you will have grown a beard when you bury it. In the same class is the "Alladin's Lamp" of radio hams, the RCA 852 (I said R C A). This tube, used with really high Q in its plate circuit, is capable of handling 500-600 watts without any of its important ratings being seriously overstepped. But it is an engineer's job to achieve this and at these high inputs it requires tremendous drive. I do think hams using 852 at 3000 volts 100MA or thereabouts have won more international tests from 28MC down than with all the other tubes together. Can we say more? (One of us will own one after Oct. These two tubes at rated inputs may be driven fully by the average efficient QRP rig, a fact which adds tremendously to their outstanding virtues. Below these we come to the 203A 211 class husky tubes, but having low impedances really calling for push-pull operation at DX frequencies and requiring a young power station to drive them to real efficiency. Single ended they are doubtful performers at frequencies higher than 7MC; taking power required to drive and other things into consideration, they are hardly a good proposition as HF amplifiers when better tubes are available. Philips TCO 5/25, a new 40 watt tube rated at about 600 volts 100MA, seems to me to be an ideal tube for the country ham. It can be fully driven with five or six watts from FD or CO, and is especially designed for amateur work. Philips assert it is the best tube anywhere near its ratings they have handled, and is destined to be the most popular ham tube they have marketed

when the hams come to know its virtues. I have never seen a more sturdily-built tube. Its plate gives one the impression that it is a 200 watter. It is obviously very conservatively rated, and is a real RF producer. The new RCA 800 is obviously another real tube. It looks like a grown up TC 04/10 in characteristics, and if it can (and I am assured it does) perform like TC 04/10 with its greater power ratings no one should ever wish for anything bigger or better for inputs round 100-150 watts; 75-80 per cent. energy transfer should be reasonably certain, which is saying things. TC 04/10 needs no praise from me. It is the ideal tube for anyone married to 600 volts or so, and as a frequency doubler feeding an antenna is about as good as the average neutralised PA in its own class. The one I have has been in use for two years with inputs of 50 watts on 7MC, and 60 odd on 14MC in a tremendous amount of work, and shows no sign of approaching demise. I have used quite a few 210's, and I really do think TC 04/10 is as good as any two 210 type. If you must use E408N, 406, type 46 or 45 in your PA, use them push pull if efficiency is desired. Further, push-pull PA's work infinitely better if a split stator condenser is used in the plate circuit. This applies to all powers.

I see no good reason why a station using PP 45's should not win the Centenary test, for, after all, countries worked will be the predominating factor, and the stations we will have to raise in Europe and elsewhere will, on an average, have little better. You cannot work a station that is inaudible, and if he is R2 there is no good reason why he cannot be raised by the most QRP station handled by a ham who uses his brains. Good luck. Go to it.

VICTORIAN AMATEURS' TRANSMITTING COMPETITION.

July and August, 1934.

Preliminaries—July 15, 22, 29.
Finals—August 5, 12, 19.

Rules.

(1) Open only to financial members of the W.I.A. (Vic. div.).

(2) Only apparatus which is the sole property of entrant may be used, except in such cases where said apparatus has been held on loan, and has been in regular use by the competitor for at least three months prior to closing date of entry, viz., April 24, 1934. (In no case will Institute apparatus be permitted.)

(3) Stations shall be operated only by their regular crew whilst competing.

(4) The frequency to be used by the finalists shall be determined by the competition committee.

(5) The technical judges will control the judging in the preliminaries.

(6) Not more than one (1) studio item will be permitted.

(7) Provided that not more than five judges be appointed (three city and two country) to assist technically with the whole of New Zealand listeners, who shall be the chief judges.

(8) All points awarded by the judges (N.Z. and local) shall be averaged; the station securing the highest number of points shall be declared the winner, and shall hold the Gadsden trophy.

(9) Points shall be awarded as follows:—

	Points maximum.
Quality of modulation	50
Depth of modulation	30
Smoothness of carrier	20
Freedom from frequency modulation	10
Selection of programme	20
Stunt transmission (finalists only)	10
Total	140

(10) After full perusal of the New Zealand Master Graph the decision of the judges shall be final, and no objections will be entertained.

For the following news from Geelong we have to thank VK3KW (Mr. Bill Keillor), or to give him his ham title, "Scottie." KW is going up from 8 watts to 15 watts very shortly, I understand. Likewise 3GZ to 15 watts. We heard something else about Keith of 'GZ; he has just obtained his "A" licence. Congratulations, O.M. The youngest of the Geelong gang. 3JQ, is a DX. fiend, and did well in the "W" Good Will Test. It is rumoured that 3EK's absence can be traced to YL's or Y L—we are not certain of the number.

Some FB fone is heard from 3BW, and 3RP, an old timer, Scottie says, is giving some of the young lads a chance now. Whether he is letting

them get a sig. in or giving some help we don't know.

3SY is too busy with the local BCL station to run anything else. 3AU is having a rest, but is still very keen. The "Black" (or inactive) list contains 3GN, 3QH and 3ZN at the moment. 3KW has gone studio "itemwards" lately, and doing very well. Incidentally 'GZ and 'KW want it known that they are open for rag chewing any Monday morning, on till 3.00 a.m., but just try them later. You'll find them still there. Personally I have never heard them close down.

Now, this news is the type we want from other members of the 'phone section, so shoot them along any old time—over the air, by phone, or by post—to 3DH.

'DH was at Terang on Sunday, April 15, where 'GK and 'BH were tuned in at good strength, and 'BY at "very much" good strength (blotting out all noises, etc.), (reception on a 5 T super). Then at 5.08 p.m., with a car radio (4 tube super) at Colac, 3RI was tuned in at quite respectable strength, and 3CB could just be identified. Later at 11.50 p.m., with the same receiver, somewhere on the road between Apollo Bay and Forrest, 'BY was heard at full strength (max. undistorted output of the power tube).

ANNOUNCEMENT EXTRAORDINARY!

Centenary Contest Awards.

By VK3ML, Contest Manager.

If any contest or test has stirred the minds of the hams during the past ten years, it is the Melbourne Centenary International DX Contest to be held in October this year. It is the main topic of hams in VK to-day. We have received letters galore since its first announcement two months ago—enough to tell us that the contest is going to be the world's biggest and best.

Of course, many letters contained some criticism for and against the present awards, mainly pointing out that there is no handicap for power inputs. Well, we have gone into this matter, and can now announce the big surprise.

There are to be TWO first prizes, one for the winner of the open event—that is. with unlimited power—and one for the handicap event, which is to be awarded on the POINTS PER WATT basis (obtained by dividing the points won by the power input in watts). Now that has made the contest still fairer, and enables every station to be on an equal footing, from flea-power up. Of course, no station can win both first prizes, and in the event of the two sections being won by the same man the open prize will go to him and the handicap award to the second placed entrant in the latter event. Therefore our prizes are now : Two firsts, one second, and one third.

Now, hark ye, mighty hams, to the latest awards, which are as follow:—

Open Event.—First, one 852; second, a Siemens meter or set of meters of any type chosen by the recipient to the value of £10; third, one 800.

Handicap Event.—First prize, TC 05/25, QC 05/15, TC 03/5, MC 1/50, E424.

Through the generosity of Messrs. A.W.A. Ltd., Philips Lamps Ltd., and Siemens Ltd., we are able to offer the above much-to-be-sought-after prizes. We are very greatly indebted to these firms for their generosity in coming forward with these valuable prizes. Just put this magazine down and think what this all means. You do not have to be told that this contest is to be a success before it is run. These firms have made it so, and the hams will never forget it, I am sure.

CORRESPONDENCE.

To the Editor.

Sir,—I feel I must express my feelings at the unwarranted outburst from South Australia in April issue with reference to notes edited by "QRZ," and feel sure that anyone who takes exception to his outspoken attempt to rectify their faults is either pigheaded or well aware of the atrocious note or procedure with which he fouls the air. and is too narrow to admit the truth.

As one who has been a "victim" of "QRZ," let me thank him now for the tips he has given, which have been a darned sight more useful than the so-called repts. one gets when QSO in the majority of cases.

In conclusion, long live "QRZ" and those of his ilk who are unafraid to speak their thoughts.—Yours, etc.,

LAUNSE A. DEANE, VK5LD.

PHILIPS NEW TRANSMITTING VALVE. Type TC 05/25.

Philips Lamps (Australasia) Ltd., 590 Bourke street, Melbourne, announce the release of the above new tube, which will be added to their extensive range of transmitting valves. The characteristics of th.s valve are are follow:—

Filament voltage, 4.0 V.
Filament current, appr. 2.2 A.
Total emission, appr. 800 mA.
Anode voltage, 300-600 V.
Max. anode dissipation, 40 W.
Anode dissipation during test, 60 W.
Amplification factor, appr. 9.5.
Mutual conductance (at 1a = 50 mA), appr. 2 mA/V.
Max. mutual conductance, appr. 4 mA/V.
Internal resistance (at 1a = 50 mA), appr. 4750 ohms.
Largest diameter of bulb, 70 mm.
Total length, 170 mm.

The filament of this valve is oxide-coated, and is therefore highly efficient, and owing to its strong mechanical construction the valve is exceedingly well suited for mobile transmitters.

The TC 05/25 has been constructed for use as an oscillator or as an H.F. amplifier in a telephony or telegraphy transmitter on wave lengths down to 15 metres. It can also be used as a modulator or frequency multiplier.

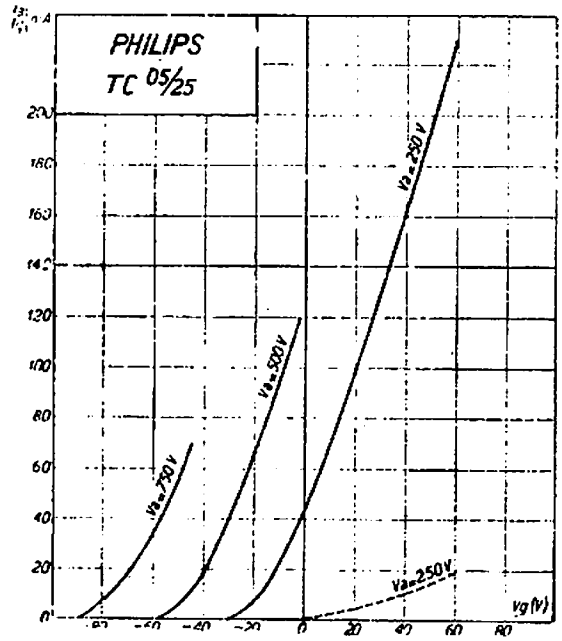
The grid excitation for one TC 05/25 can be obtained from a Philips TC 03/5. One TC 05/25 can be modulated with two TC 05/25 or "Miniwatt" valves F410, connected in parallel. using anode voltage modulation (Heising system).

Filament Voltage.—It is advisable to supply A.C. to the filament. When using a 4-volt accumulator it is as well to interchange the filament connections once a week in order to ensure uniform wear of the filament.

Anode Voltage.—For this purpose the use of one Philips full-wave rectifying valve 1561 (2 x 500 volts, 120 milliamps), one or two Philips valves 1831 (2 x 700 volts, 60 milliamps), or 1832 (700 volts, 120 milliamps) is specially recommended. It is also well, if possible, to use two half-wave mercury vapour valves, DGG 1/125. For values of the anode voltages see under "Operation."

Negative Grid Bias.—When the TC 05/25 is used either as an oscillator or as an H.F. amplifier, the gridleak resistance should be approximately 4000—0. At a low anode voltage a smaller gridleak may be used. A h gher gridleak will result in a higher efficiency with a lower input. It is recommended to apply sufficient negative grid bias via the leak and high-frequency choke coil, so that the anode dissipation does not exceed 40 watts with the valve not oscillating.

Use as an Oscillator or H.F. Amplifier.—On wave lengths of 150 metres and higher the anode voltage may attain 600 volts, whereas the



maximum anode voltage for wave lengths of approximately 15 metres may not exceed 500 volts. In both cases the anode current may amount to 100 milliamps. In the case of a loosely connected aerial circuit, a high anode current may not be forced up by too heavy grid excitation. In that case the grid current would be much too heavy. A gridleak resistance which is too low can have the same effect.

If the adjustments have been carried out correctly the grid current will amount to approximately 15-20 per cent. of the anode current.

Use in a Frequency Doubler.—On account of its great permissible anode dissipation the TC 05/25 offers special advantages when used in stages with low output, e.g.. a frequency doubler. Its high mutual conductance and the low internal resistance render the tube highly suitable for this function. In this case it is recommendable to apply the normal anode voltage and a negative grid bias of about 150-200 volts. The latter depends on the ex-

citation and on the impedance in the anode circuit.

Use as a Modulator.—When used as a modulating valve the negative grid-bias should be such that the maximum anode dissipation of 40 watts is not exceeded. If several valves TC 05/25 are to be connected in parallel, each valve must have a separatly adjustable negative grid bias, so that the load can be uniformly distributed over all the valves. It is then necessary to insert a milliammeter in the anode circuit of each of the valves. Interrupt on of the grid bias may only take place when the anode voltage is switched off.

THE SECOND FISK TROPHY CONTEST.

Contest to be known as the Australian 1934 Low-Power Contest, and to constitute the second leg of the Fisk Trophy competition to decide which State will be the next holders of the Fisk Trophy.

A station decides to use a certain power (within one to 10 watts), and goes on the air during the period of the contest with the view of making up to 30 contacts, with as far distant stations as possible. The lower the power and the greater the distance of the station contacted, the higher will be the miles per watt.

Each State Council is requested to provide a prize for the leading entrant of their particular State, to stimulate interest and increase the chances of the State concerned.

Rule 17 definitely gives a State with weak numerical strength an equal chance with those with a large number of hams, for every State can find five active hams to act as its team.

Non-members of the W.I.A. are invited to compete and forward their entries.

The rules are as follow:—

(1) The Federal Executive's decision on all matters will be final.

(2) The A.R.A. are the representatives of the W.I.A. in New South Wales.

(3) The power will be measured at the anode of the valve feed-the aerial. and must be between one and ten watts. The anode voltage and current must be stated. The same power must be used on every band for each contact. Entrants are especially asked to note this.

(4) The Federal Headquarters reserves the right to appoint a representative in each State to inspect and check the power of any participant during the contest.

(5) The contest will start at midnight Eastern standard time on June 22nd and finish at midnight on June 30th, 1934.

(6) All logs must reach the Federal Secretary, W.I.A., c/o Box 284D, G.P.O., Adelaide, by July 10th, 1934. Late entries will be excluded.

(7) The following particulars must be shown in the log report:—Date, Time (Eastern Standard), Report Received, Report Given, Band, Station Worked, Nearest Large Town, and Estimated Distance.

(8) Once a station has been QSO-ed, he cannot be QSO-ed again on the same band during the contest, but may be contacted on any other band.

(9) Any of the amateur frequency bands may be used.

(10) As many contacts as possible can be made during the contest, but only 30 are to be counted. Entrants are asked to submit their 30 best contacts, or any number up to that figure.

(11) Each participant must find out from the station QSO-ed the name of his nearest principal city, if not already known by him and entered in the log.

(12) The distance between the entrant and the station marked will be measured by Federal Executive. These distances will be totalled and divided by the power used, thus finding the M.P.W., which will be the score.

(13) No distance under 100 miles will constitute a contact.

(14) And entrant detected breaking any P.M.G. regulation will be disqualified.

(15) No member of the Federal Executive can enter as a scoring member of a State team.

(16) Only one operator will be permitted to operate at any one station, and his name must be stated on the log report.

(17) To decide the winning State an average will be taken of the scores of the five leading stations of each State, and the State team having the highest average will be the winners.

VK3 SECTION NOTES

Key Section

(Conducted by L. T. Powers, VK3PS.)

In the absence of our chairman, on very important business, 3WG took charge of the last meeting of the section, and kept the gang well in order with an interesting chat on Institute consciousness, which should be remembered and followed. It would be well worth printing, but no one could write shorthand, and many good points would be lost in an attempt to reconstruct that lecture given in Bill's inimitable way.

A suggestion has come forward that visits should be made by the section to various places of interest, such as the police radio station, and if the gang would appreciate this they can say the word at the next meeting, and we will see that arrangements are made.

Although his QSL card may boast that the station is 100 per cent. D.C. operated 3KR would do better on A.C., as he wouldn't have to clean battery terminals (although he only does it once a year now—hi!). It takes about five minutes to find a spot for the battery clip to get any juice through for the rx! 3KR was QSO with 2DQ one morning during Easter, and the latter signed off "GN." We wondered what DQ had been doing during the holidays.

Did anyone notice in QST about the ZL who went off the deep end about a W answering a badly directed CQ? Well, 3PS, working from 3KR at Easter, answered a CQ Dx from a ZL3 at 1400 one day on 40 mx and got told off properly.

3CS is a new call that is owned by ex 7CD, and if anyone wants an fb local rag chew they can be sure of it by calling 3CS. 3JO is another transfer from the Apple Island. Originally a VK3, he has been operating as VK7JO for some time past.

Before going on a trip round Australia 3OR left explicit instructions on how to charge the B battery for the B.C. rx from a 32 volt light plant, but forgot to connect up the switching gear. He runs an audio amplifier with a pair of E408Ns in P.P. feeding three speakers on a 4-foot square baffle. The range is said to be 14 to 14,000 cycles. This must be to entertain the swans on Lake Meran!

The Canterbury gang seems to be concentrating on S.S. Supers. 3RX started the craze; 3BQ has gone one better with a xtal gate in his, and says its vy fb. These things are necessary in bad QRM areas, and the Malvern-Glen Iris group might well follow the example. 3DM has made a start, and wants a few rag chews about Supers and also Doublet Antenna systems.

3BJ says link coupling between stages is fb and 3PS will second this. If you want a hefty drive, try this out. What's this secret rx of 3YO? He says it should drag in more sigs than Cedric's S.S.S. Perhaps that's nothing to wonder at!

3EP is praying that the S.E.C. will take over the supply at Rochester. He will be on C.C. very soon, and can't get enough kick out of 200 V.D.C. to produce the desired effect (i.e., QRO).

3RG at Castlemaine is putting out some fb fone on 200mx and working some DX on 40mx, but very seldom has a yarn with the gang in VIM on account of skip. He seems to have entirely forsaken 80mx.

Rebuilding seems to be the order of the day, and circuits published in "Amateur Radio" seem well to the fore.

3KO is finding both rx and xmttr built after "Amateur Radio" style very fb. New xmttrs are being built at DP, WY, CS and KE, and receivers at LQ, DM, YO, CS and PS.

That's all for the present, and don't forget to let 3PS know anything that's doing, so as to let it get into your notes.

PHONE SECTIONAL NOTES.

The last meeting of the above section was held at Kelvin Hall on Tuesday, March 27.

Mr. Thompson spoke on the matter of allocations being treated as a permit to operate on the phone band. The position amounts to, in short, that unless a station has an allocation on some frequency between 1720Kc. and 1114Kc. it may not be operated either on week nights, Saturdays or Sun-

days, on any frequency below 1720Kc.

In connection with the now well-known (we hope) competition, to be held during July and August, namely, July 15, 22 and 29, with finals on August 5, 12 and 19, it was moved by 'T.H. and seconded by 'L.U. that the closing date for entries be extended to April 24, which will give those who did not send in their entries at the last meeting time to bring or send them along to the April meeting.

Before coming to the competition rules there was one other motion carried—that the value of crystals, supplied by members who came into the pool when it was formed, be fixed at 25/. This means that any station coming up above 200 metres for the first time will have to purchase a crystal from the Institute, the fixed value of which is 25/, or, in the event of another station becoming inactive, and this station takes from the pool the crystal originally supplied, the incoming station may supply a crystal for the frequency where the blank occurs. The above motion was carried unanimously, moved by 'T.H. and seconded by 'B.H.

COUNTRY NOTES

By 3WE.

Doings in the north during past month have been varied. 3LH did not move to Sea Lake, after all, business having looked up a bit, thanks, probably, to the forthcoming Test matches. Herb. is still in Birchip, though has done little on the air bar entertain the BCL's on 200 metres. 3CH has been grinding xtals—extra special ones, too. Had one in t'other pm which 3WE reported too low in frequency for 3500 k.c. band, so Alf ground it down hard and tried again. Bill reported it still about 90, and advised a few more brisk rubs. Alf obeyed orders, and came back on the same spot. Said he'd busted the pebble, but had a bit which was still oscillating all right. 3WE suggested taking the xtal out to see what happened. It still worked—hi! 3WE had a similar experience when tuning his 80 metre rig up to 229 recently. He found that the CT grid choke (PP stage) made a good TNT coil on about 240 metres, hence the new one is nearer 1000.

With the cooler weather 3500 band is becoming "fuller and fuller" each night. Besides our northern gang, quite a number of others seem to be discovering its possibilities as a VK-ZL fone band. There is going to be some Qrm this winter. 3500 k.c. is rapidly "coming good," and by the end of the present month should be ideal, except for occasional patches of Qrn, and the nightly fade-out. The latter phenomenon (at present at midnight) should go further on, and set in during the small hours. 3PY and self (3WE) have kept tabs on it, and find that it varies with the season to the extent of about an hour per month from December last, with occasional throwbacks for a spell of hot WX.

A list of stations heard on 80 on fone alone would nearly fill the whole mag., and includes W, K, ZL and all VK except VK6, although plenty of the latter heard pounding brass. Some of the best fone comes from 3PY, 2NE, 5WJ, 3ZL; but some of the others are pretty deadly. There is also a tendency to use the band for grinding out records by the hour—anyone who wants to do that should apply for an allocation on 200.

The Northern gang—3CE, 3KR, 3PY, 3JV, 3CD, 3AN, 3CG, 3ZL, 3CH, 3WE and others—still work their hook-ups, up to 6 way Qso's being common, while the Sunday morning ragchew a la 3HL, 3KR, 3NN, etc., still goes on. 3500 is becoming popular in VK5. 5WJ leads the bunch in quality, but the daddy of them all is 5QR, with his 1½ watts of B batts. and puts phone into ZL. Even 5LD made his debut on 80 phone the other nite. Loop mod. 5LR and 5IV still very active, but it is reported that 5XR has Qrt. Did someone say a YL? (Read the "pome" in last issue agn, OM.) 3ZK, the no meter expert, only hrd once of twice; must be getting cold on the concrete floor, or, maybe, the 15 2nd ops have got out of hand. 3PY had a ribbon mike. Ses was fb. but couldn't breathe within 30 ft. of the xmitter. Since made a new condenser mike. 3ZL, Telefunken king, still takes the YL home early, so he can get on with the 80 gang.

Doings during Easter were enlivened by a trip per 3CH's "Stude" by 3CH and 3WE, complete with YF's. Said hams made most of the opportunity to personally Qso as many of the boys as possible. 3KE was WE's first port of call. Qrm from trans at Ke's is nearly as bad as from the Birchip power house. Going out to call on 3KT, Bill got properly caught.

KT had his sticks down, and 3WE bowled into a nearby house, thinking he'd struck the right joint—and found no one home. Anyone listening to 3BY on Easter Sunday nite, with 3BY, 3TH, 3DH, 3CH and 3WE present, knows that the fun was willing.

WESTERN DISTRICT NOTES.

By 3HG-3OW.

The main item of interest seems to be the trip of 3JA, 3OW and 3HG to Camperdown and Terang on the 22nd to see the boys there. The weather was very unpleasant for travelling, but a most enjoyable day was spent in the shack of 3GQ, yarning before the fire. The Colac gang and 3NQ were invited across, but were unable to make the trip on account of the inclement weather. During the afternoon 3GQ showed us just how easy DX is, and we all have new ideas for 20 metres. After tea we all went along to Terang to call on 3NZ, but found Norm. out when we arrived. However, we decided to await his return, and spent the time swapping yarns (?) in his six by eight shack (standing room only!). Time crept on, with no sign of the missing ham, although he was expected at 9.30 p.m., so at about 11.30 it was decided to leave for home, and just as the car started up rolled 3NZ himself, as large as life. It is still a mystery where he was all the evening, as he would admit nothing; but the boys had their own ideas!

3JA is another who has staged a comeback on the air, and it is hoped he will be on a lot now, as YL qrm seems less troublesome! 3XI is building up a new rig, and hopes to be on soon. Heard his speech amplifier, and, believe me, that boy knows how to get high quality reproduction. 3RH heard working on 40 and 80 with the same old fb sig. Nearly blocked receiver here. 3HQ still off after her recent illness; and where, oh! where, is 3HM these days? 3BW is away on a trip to Fiji, accompanied by 3NM.

Conditions on 40 are falling off rapidly now, but 20 is brightening up and 80 is very active now that old man Qrn has lifted.

Qru now, so cheerio till next month.

NOTES FROM NORTH-EASTERN

VK3EG.

Well, the gang certainly seem to be busy, judging by the fellows using S.S.S. receivers and what not, and the Q.R.M. is just as bad as ever. Still, it shows the band is well inhabited, so why growl.

With better condx, 80 metres is becoming popular now. The Quirindi gang have been quiet. You boys sure disgust me; where are your notes, fone 2?

John, of 2XQ, been away, and will be qrt until end of this month, on QRP then. Ur xtl sigs R Max hr, O.M. 2NK hr R7 fone fb, but QSO? N.D.

VK2BP fone nice, VK2QA R Max fone also 2HV. 3CE hrd often, and ole 2RJ gets the call nw and then, and QRM's me. Hi!

DX up here been FB lately. Yanx can be QSO'd from 3.30 p.m. on EA sigs a-plenty 'mongst the QRM, and the 40 mx gang sure rub in some solid sigs hr. 3NG nice fone R9 Telefunken. 3HG nice just pdc solid, 3WL hrd nw and then clg DX, the Yanx seem to fall hard for 3MR, hrd seven yelling last nite. I seem to be QRA hr in great place for reception of any locals on the air, Hi! 2HF R. Max. SE pdc. VK2ZH nice sig, O.M., has been rebuilding. Was in VIS at Easter, and saw his rig at the Show. FB and that, S.S.S. too. Also saw 2LV, 2HU, 2NO, and had nice rag chew when I was down there.

VK2HB, VK2ML and 2QS, the "army," hi! All put a mean sig in here. Ole 5MU has bin robbed, and now 5SU puts out xtal sig that makes the Yanx fall over thembselves. 2OF is qrp again. 2WU was on 40 for first time for months; haunts 3.5 mc these days, R8/9 here.

Sunday mornings are great for rag chews on 7 mc, and dozens of XKS on fone. The VK5 very solid here. Ole 20j QRT mostly wid PWR tranny truble, 2DO R7 wid his 45's. VK6RA R7 pdc hr late at nights, and VK6FL still misses a lot of sleep. K6EWQ on 7010 comes in R9 here. VK3EG is glad to be back again after couple months' change in QRA. Using 45 C.O. 46 buffer and 210 final wid 1000 v. on the 210 at 130 mills; 700 on the 46, and putting 2 amps. up the 33 ft. feeders. Antenna very directional for VIS, and VIH, but been landing the DX nicely.

Guess the boys will soon be dusting up the gear for the VK contest; it sure will be all in.

NORTH SUBURBAN RADIO CLUB.

VK3FY.
W. Wonder.

Since writing the notes for the last issue of our "Mag" 3FY's club rooms have been the scene of many activities. On a recent Saturday afternoon a 35 ft. mast was hauled (amid a sixty-mile per hour gale) to the roof of our club rooms.

After much heaving and hoing Dick Dowling, plus an assistant weight lifter, managed to pull the mast into position, while about twenty members held guy wires from various angles, thus preventing the mast from leaping on to the roofs of our neighbouring BCL's.

The work concluded at 6.30 p.m., when light refreshments were served. It is to be hoped that this new aerial system increases the range of both the short wave and broadcast transmitters.

It is with regret that we announce the resignation of our President, Mr. W. Murden, 3TY, whose time is temporarily taken up with study. The presidency is now in the capable hands of Mr. D. Dowling.

A morse class has commenced, and will continue at 3FY's rooms every Monday evening other than general meeting nights. Full particulars will be supplied by either the secretary, Mr. F. Maher, 3FZ, or the publicity officer, Mr. W. Wonder.

3FY's new 200 metre transmitter is in the course of construction by a number of our capable engineers, and it will be on the air during April, replacing the present outfit.

Full particulars concerning the club's activities, etc., will be supplied by the secretary, 102 McKean street. North Fitzroy, or at the club rooms, 354 Rathdown street, North Carlton.

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

ZONE 6.

With the approach of winter all the country chaps seem to be brushing the cobwebs off their gear and tuning up on 80.

2WH has his rotary converter pegging fb now, and uses a pair of 46's in the PA, modulated by a 250, and at this location puts in a R. Max signal. 2LM had the misfortune to burn out his 3000 volt genny, but, not to be beaten, put a slipring on the motor, then rewound a few transformers, and is going fb now with an A.C. supply. 2RS is back after an extended holiday in VK3; brought some new tubes with him, and now has the fone working very fb.

2UJ uses a vibrator and tranny for power supply, and has trouble with the points. Judging by the fb fone and music from 2QZ, he must be located near 240 A.C. mains. 2RJ was heard once. He had his 2000 volt genny rewound, also rebuilt the outfit and installed a new modulator. 2QA is now using grid bias modulation adjusted according to VK5MU in March "Amateur Radio," followed by two stages of class B linear, and the results are superior to any other method tried here. There is also a new receiver in use here, two stages of TRF using 78's electron coupled 77 det resistance, coupled to a 37, which is choke coupled to a 43, feeding a dynamic speaker.

As the winter approaches the VK3 chaps come in very consistently, but most of them don't come on till midnight. I think they must go to bed early, then get up and come on the air.

2XQ is heard occasionally with a T9 signal, but 2HC, of B.E.R.U. fame, seems to be absent. VK2JG has acquired one of the new piezo astatic crystal mikes. The quality is fb plus.

ZONE 7.

On 40 mx conditions have been only fair in this part of the State. DX appears to fade out earlier now with the winter coming on, although some excellent early morning DX has been heard.

The 80 mx band is back in its stride again, and we find a great number of the local chaps using this band.

In Wagga we have another call, VK2JA, and Athol Mitchell, the op, would appreciate it if the pirate who has been using that call for some time would discontinue. Athol puts out an fb sig. from a pair of 46's in PP, and is looking out for Qso's. 2TH has rebuilt his MOPA to breadboard layout, and the first CQ raised W6QD, but when he reported Roy as R9—well, the glassy look has not left Toc H's eye yet.

2WO has changed Qra again, and is now located at the Wagga Fire Station. The station has been off the air for some time, but the gang are rebuilding, and will be on with a Tritet osc and PA shortly. 2PN been working DX on 40, but says he is going to park the rig on 80 mx and leave it there for the winter. Heard a Yank calling 2TA on 40 mx, so guess Allan is still after the old DX, but he talks of changing up to 80 mx again soon. Bert, of 2TZ, is still coming on the air again—when? 2FI has his dynamite factory going again with a car engine on the generator. Gets fb reports on 80 mx, but on 40 the antenna appears to be very directional, and reports vary accordingly. 2WH has a very fb power supply consisting of a small rotary converter working from the 32 volt supply. The transmitter is three-stage xtal, and is entirely worked from A.C.

Well, I think that's Qru for this month, but I would like to point out to the gang in this zone that 2FI is on 80 mx every Saturday evening looking for dope.

ZO 2QR.

Well, chaps, here are just a few strays gathered on 14 and 7 mc during the past few weeks.

Jack Scott will no longer make whoopee with the DX, for the Orsova is bearing him rapidly towards the land of G. Scottie had a way of his own with the DX, and it becomes very ordinary to call long and lovingly to some DX station, return excitedly to the receiver, and be rewarded by hearing 2NR called.

2JX, when informed on the morning of April 1st that his xtal had two peaks and was joyfully jumping from one to the other, would not believe 2QR; but had to be rung up, and even then I think Peter thought I was pulling his leg. 2XU is a 20 mx expert, and 20 had to be very, very dead before Gil's T9 sigs are heard on 40. 2OR burnt his hand badly at work. 2DR going CC on 40, and was found trying his hardest to beat down an Arcade junkshop salesman. Pretty hopeless, eh, Don? As a result of being the youngest student in N.S.W. to pass the Leaving Certificate, 2QZ is now at University, and often sits and gazes longingly at the cupboard where his OM has locked up his outfit. 2ZO puts out fine fone on 40 mx, and he will soon have another blind operator on the air, as my ole pal, George Best, sat for the last exam. Look out for them both, chaps, because the least we can do is to try and make their Qso's as bright as we can. A loud voice was heard on 7 mc calling "Hullo, Cadcock!" 'Twas 2ND, and he informed the plane that their sigs were very weak. Say, 2ND, if you can't hear 'em on the "Comet Pro" they must be weak. 2ER is chasing DX on 14 mc. Don't know what he is using, but bonza pdc sig here. 2DU puts out excellent 7 mc fone, and 2ZN tells me that Dud's RX is fb.

Well, chaps, would you be good enough to give me all your latest doings per 7 m.c., or let me know by post?

ZONE 8.

VK2NF has gone to VIS to sit for exam., and hopes to be back on the air with renewed vigour when it is over. Good luck, Reg. 2QD having trouble with his Hertz, after putting up a new 50-foot mast. The housetops seem to be absorbing all the radiation. 3EG is using matched impedance Hertz, and has plenty of punch here now on 40 metres. How does the 210 like it, Ivan?

80 metres is improving, and appears very popular. Most VK fones are R8.

NORTH SHORE ZONE.

The most outstanding event during the month was the farewell hamfest to 2NR, which was held at the shack of 2JX. Although the wx wasn't of the best, there was a good roll-up of hams from around the distinct, including the following:—HZ, HY, HG, HL, VL, LZ, ND, VS, UX, DY, OR, ER, QR, OR (2nd op), DR, and, of course, Scotty, of 2NR. Frank, of 2ER, officiated as toastmaster, and did his job so efficiently that (well, anyway, Frank says that the trouble was caused by a bit of cheese he had eaten, hi). Many were the tall yarns in circulation over the hotdogs. 2HG excelled himself and astounded us by an anecdote re a couple of 201a's which, he said, had a load of 700 watts! This was too much. Frank proposed a toast to those 201a's, and we stood for a minute in silence in memory of them, hi. Well, I think Peter, of 2JX, is writing up the hamfest, so I won't steal his thunder with any more here.

Another event of merit was the activities of Mac (2ZH), with his station

at the Royal Show. He certainly did some splendid work in spite of the terriffic Qrm, etc., from nearby motors.

HY, DY, LZ, HL, VS, HZ, and DR were entertained by 2ND somewhere around the mystic hour a few weeks ago, when the boys had an eyeful of TND's Comet Pro. The receiver is certainly fb plus in performance and appearance. Norm says that he honestly can't give any Yank a report of less than R6 now, and he's certainly proving it by working them hand over fist each night.

Eric, of 2EL, has now installed a 40 mx xtal, and is driving a pair of tens in the PA. 2EL has erected a new full wave 40 mx Zepp, and has noticed a marked improvement in his reports.

2AG is getting out with his T9 sigs and brings in lots of Yanks. 2AH is very busy tuning up his S.S. Superhet., and, believe me, it's fb plus.

I had a visit from 2EZ recently, 2EZ has been up-country with Qrp, where he worked a W6 with 3 watts. 2EZ is going down to Jervis Bay and 250 volt D.C. mains shortly. 2VG's call sign is prominent on the wall of Manly surf sheds. Evidently Rex has been Qso surf recently. 2BA is back in Sydney again for good, and has a type 800 perking in his PA. 2DU has been Qrl this month, and hasn't been on much. 2DY is building a new multi-stage xtal rig. 2GJ has gone xtal at last, and is doing his best to trawl some DX in the mornings. 2HG says that this getting-up-in-early-mornings-for-DX business is not so hot. Jack is now keen on the rag chewing at respectable hours. 2HG has worked a couple of Europeans during the month, one of which, PAOSP, would like contacts with VK's. 2AE is a brand new ham who hails from Wahroonga: his Qra is 1658, Lane Cove road, Wahroonga.. and the name David Adams. Dave has a temporary rig on the air. a TNT with about 600 volts on a 45.

2AE is the youngest ham on the air in VK2. and perhaps in all VK, as he has been given a special licence by the RI because he is only 13 years old!! Have heard many Yanks calling 2HF, so evidently the Qro is perking over Manly way. 2ND has installed a condenser mike. and. believe me. the phone is now absolutely faultless. Norm brought down the height of his ant. at one end, and immediately worked an F8. 2JU visited 2AH the other day, and had a big rag chew with Alan. 2JU had a fifty watter in tow which he wanted tested. Paul, of 2KA, has been heard on fone at the week-ends. Evidently the auditing of the A.R.A. books is keeping Paul busy, as he doesn't seem to be on as much now.

2OE hasn't been on the air much, but has been busy eavesdropping at his receiver. 2JY has built the Tritet 5 band exciter unit, and has been very busy winding power transformers during the month. 2PV still Qrl Uni., and has given up the idea of getting on the air for the time being. 2VG is still working many W's. 2YC appears to hold a minor hamfest every day in his pharmacy. 2NE has a very nice rig, but has to keep it quiet during broadcast hours. 2DR has at last installed xtal on both bands, instead of xtal on 80 and S.E. on 40. Also has acquired a brand new second op. (No, not a junior op, hi.)

Well, at last 20 mx is looking up again. The W's are coming in well in the afternoons, a K6 was heard coming in on fone at R8!! Also, 40 mx is still holding its kick. The Europeans are being worked in the late afternoons, and plenty of W's at night. Altogether, it has been a pretty successful month as far as conditions are concerned. Well, that's about the lot for this month; the Epping district notes will probably appear under a separate heading from now on, under the able pen of 2QR.

MANLY DISTRICT RADIO CLUB.

Broadcasting Surf Carnivals.

By Doug. Hardy.

Yes, friends, countrymen and hams, it was our privilege to receive an offer allowing us to broadcast the events of a surf carnival on Saturday last. This time it was the North Steyne Carnival, which is noted for choosing heavy weather year after year. Saturday was no exception to the rule, for be it known that a bumper surf was curling on to our golden sands.

Volunteers were called for a 2nd op. on the lugger. Alas, at times like this 2nd ops. simply fade away, however. We certainly should have shanghied one of our members, but

this was not necessary, for he arrived in time to sail on the clipper.

The art of bargain hunting was the next part of the procedure to be indulged in (very necessary business this), so we paid a visit to the company of Widdis Diamonds; 250 of these sparkling little fellows were set before us in two big parcels to do with as we would.

As we set off everything runs sweetly UNTIL we reach the heads. Here we meet green seas rolling in, our gear has to be shifted on to the floor, and from now on we chase batteries, receivers and mitter, first aft, then for'ard.

At last we arrive off the beach. How we arrived or why does not interest us very much, for 2nd op. is busy over the rail, and methinks 2WQ is feeling much the same way.

However, the receiver is perking okay and we pick up a message from 2MR, our offsiders on the beach. They say they have not heard us yet. "You're telling us," we say, "maybe you would like our job of pitch and toss out here."

The first event is about to start. Everything is ready, switch on, yes, both toobs are alight—pop, pop—what was that? The filaments that were, are not! How come, say you! Oh, the "B" batteries just slid across the floor and played a little joke on the low tension leads, with the expected result.

We try to bribe a surf boat crew who are mucking about alongside us to go ashore for more toobs, but, no, sir, "If we go ashore we stay ashore," said they.

So, we of the boat crew did nothing, if counting seagulls and dead marines can be so called?

The shore station was all set for operating by 2 p.m., so a shout was given to XVK2MR without success.

In the end, getting sick of it, we thought we had better ask them a few questions, they, in turn, answering us by waving a handkerchief. It was in this manner that we learned of their inability to QSO with us. We waited about for two or more hours in the event of them coming on the air again, but on seeing the lugger weigh anchor we decided to call CQ once, we clicked and then hiked round with our gear to the cove, where we met the "ark" alongside the jetty, and two "not so happy" operators.

Well, gang, so ends one of the days in the lives of members of the "live radio club" who are ever on the lookout for something to do. Anyway, we are quite sure the "yachting party" had plenty to do.

By the way, hams, have just heard 2WQ with some very fb fone, and as he has only had his call a coupler weeks he is very anxious to QSO, so give him a shout sometime. His QRA is R. Wilkins, 87 Darley road, Manly.

VK4 (QUEENSLAND DIVISION)

The seventh annual meeting of the Wireless Institute of Australia (Queensland division) was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, April 13, before a very large attendance of transmitting and student members, also two visitors VK4RQ and VK4KZ.

Trophies.—VK4GK, of Wynnum, was presented with the gold trophy for the best station for 1934, and VK4RY with the red pennant for second place.

28 M.C. Trophy.—This was presented to 4XN, of Dalby, second place being awarded to 4GK for work on ten metres.

Pennants were awarded to the three VK4 stations gaining the leading scores in the recent Fisk 5-point relay contest. 4RV, 4AW, 4DR, in order of their scoring.

Election of Officers for 1934-35.—President, A. Waby (4AW); secretary, Mr. Houston; assistant secretary, Mr. Harmer; treasurer, R. Browne (4RB); Qsl. officer, C. Miller (4US); traffic manager, A. Waby (4AW); publicity officer, W. Harston (4RY); legal adviser, H. Walsh (4HW).

Council.—V. Kenna (4FK), W. Harston (4RY), W. Chitham (4UU), W. Wishart (4WT), R. Browne (4RB), Mr. Harmer.

Life Member.—In recognition of past services in connection with the management and activities of this division the appointment of hon. life member was conferred on Mr. A. Waby (4AW).

Kindly note that all correspondence for the Wireless Institute (Queensland division) should be addressed to the secretary, Box 1254 V., G.P.O., Brisbane.

Conditions on the various bands in VIB have been rather poor over the

last few weeks, with the exception of W stations on 40 mx; nothing much has been heard in the way of dx.

4JF now back at his own Qra, and has been experimenting with grid modulation.

4US reports conditions nsg lately, dx being hard to work. He has worked 13 countries with his TNT, input being 12 watts.

4RC is Qrl, building a three-stage Mopa. 4KX looking forward to some good fone. Qso's, on 80 mx, has just about completed the fone portion of his rig.

4WD reports Qrm from power leaks makes it impossible for him to work anybody. During the recent A.A.R.L. test both 4GK and 4UU seemed to be working the W's and VE's in grand style; the total points gained by 4GK were 6000 odd, and 4UU over 2000. 4TY is now located at "Sundown," Green Valley, via Jackson. Norm. is using a Ford coil for his plate supply. 3ML paid a hasty visit to VIB after Easter, and met some of the boys, also swapped quite a few yarns, hi. Our only regret is that Bob could not stay longer, as it was a sort of hello-goodbye visit. 4JW has been heard quite a lot recently, and certainly been making the old spark coil work overtime.

4RM been rebuilding his 200 mx gear, also getting fb reports from ZL, W. VE, etc., on 40 mx with his 2A3 as oscillator. 4WT recently put fone over to W8, report being Qsa 5 R5, quality good. Bill is using Telefunken modulation, and was sure excited when he heard this Yank station calling him. 4UK, of Toowoomba, been giving the dx a spell lately; has built an fb Electron coupled receiver. 4KH, of Wynnum, has got the ole shivery rock going at last; now putting out an fb T9 signal, and receiving very good reports.

4GU having trouble with BCL sets, so is Qrl building wave traps, key click filters, etc., to try and keep them quiet.

4JB now putting the finishing touches to his new xtal rig, which will be a fb job.

VK5 (SOUTH AUST.)

The annual meeting of the Institute was held at the clubrooms on Wednesday, April 11. There were about 60 members present. It has always been the custom in the past for this meeting to take the form of a social held at a restaurant, but this year it was held in the clubrooms instead.

The annual reports were read, and it is pleasing to report that althougn the Institute suffered a severe financival loss early in the year, through rigid economy it finished the year with a surplus. This reflected great credit upon the retiring council.

The chairman, 5RD, then declared all offices in the Institute vacant. Nominations were received, and an election of officers were held. Those elected were:—Mr. A. O. Richardson, 5YK, President; and Messrs. R. Bruce, 5BJ; M. Gray, 5SU; R. Hoskard, 5RH; M. Hider, Colin Howie, 5RF; W. Pitchford, 5WP; G. Ragless, 5GR; H. Roberts, 5MY; and K. Wadham, 5KW; members of the council.

The retiring president, Mr. R. D. Elliott, 5RD, in his address, thanked the council for the excellent work they did during the year, and for carrying the Institute through what was probably its most difficult year since its existence. He said there was a lot of new blood in the new council, and every confidence could be placed in their carrying on the good work done by the former one. The radio inspectors' department was also thanked for their co-operation and confidence in placing in the hands of the Institute the granting of 200 meter permits and the power to deal with interference complaints.

The new president, Mr. Richardson, in his address, said that the Institute had passed the crisis, and the way was now clear for it to go ahead and prosper as it did a few years ago. The club transmitter, 5WI, which had been off the air for the greater part of the year, would commence operations again. The frequency checks would be continued, and any amateur could get his accurate frequency by arranging a sked with 5WI. There had been a lot of controversy regarding the accuracy of the Institute's frequency meter, but it had been checked against American standards, and found to be accurate to within .01 per cent. The library was also to be enlarged, and subscriptions would be sent to leading European and American radio journals. In concluding, Mr. Richardson aooealed to all hams not members to join up, and thus permit the Institute to represent the hams as a body instead of only a proportion.

Tribute was paid during the evening to the work of John McGee, our secretary. He took over the job at the most difficult time after being a member of the Institute for only a short time, and through his untiring work the books and other matters were remodelled, and were now an example of neatness and efficiency.

Conditions in VK5 up to 20/4/34 have been much the same as they were last month.

40 meters does not seem to have the usual kick in it, though it is certainly better than it was last month. QRN is much less, with the result that the majority of the usual DX stations can be heard. Plenty of EAs were heard during the Spanish test, but, although the local chaps called repeatedly, few QSOs were made.

20 meters is still patchy, though occasionally some good DX can be had down there.

With the coming of the winter more attention is being directed at 80 meters. Many of the hams are busy building rigs, and every week sees more and more stations up there. It should not be long before this band is once again a hive of activity.

The Easter holidays saw quite a number of the gang away from home. 5SU spent the time camping at Wellington on the River Murray.

At Victor Harbour the scribe ran in to 5RD, John McGee, our secretary, and quite a number of the second ops from the city.

Harry Wheeler, 5HW, and a friend toured the south-eastern portion of the State with a motor bike and sidecar. They said they had some difficulty in negotiating some of the sandy tracks they encountered. Harry is making an f.b. job of the elementary lectures he is giving at the Institute.

Harry Roberts, 5MY, has at last received the success he deserved—W.A.C. He recently clicked with HC1FG in Ecuador, and had a rag chew for 35 minutes. His sigs were reported QSA 5 R4, but the HC's sig was R6 in VK5. An 80 meter phone rig is contemplated for the winter months. One of the best notes on the air is 5LB's. Lionel's clean, crisp style of sending also makes it a pleasure to work this station. Dave Greenlees, an enthusiastic receiving member and well known to hams all over Australia as VK-DG, recently celebrated his twenty-first birthday. All the hams wish him the best of luck on having gained his majority.

5RF, who recently went QRO, is thinking of going down on low power again. Colin received a report at the last meeting from U4BG, of Sverdlovsk, U.S.S.R. He was reported QSA 4 R4 cc. note—and this from a 6-watt Hartley with a 245. The Port Lincoln station, 5WJ, puts out a hefty signal on phone. He is often heard in the capital on Sunday mornings R max.

5KB has a strong P.D.C. sig. Long calls must be the order of this station. The other night he called a W1 over 30 times without signing. I counted 29 calls, but did not start to count until I grew tired of listening for his call. Even after this marathon call he did not click. Maybe the W1 went to sleep waiting for the signature. Half an hour later 5KB came on with renewed energy, and this time 37 calls were directed at a W5 before he disclosed his identity. Now there ought to be a law against that. 5MD has a nice 3-stage c.c. a la QST rig on the air, which puts out an f.b. note. The 200 meter transmissions from this station are still excellent. 5FM still pushes out a T9 note with tons of punch behind it. 5JA recently pierced the sky with a new 63 ft. 6 in. post at his new QRA at 21 Douglas street, Parkside. Transmitter in use at the present time is a two-stage c.c. job, with a 47 co., and freq. doubler and a 210 p.a.

5MZ has been working plenty of Ws on 40, and also ZLs on 20. Has a new 35-foot stick in the backyard now. Regular skeds with W3DLR is the only thing 5LD has to report. 5GC was on with a m.o.p.a. for a time. The note was not all that could be desired, so it was scrapped. 5RD has the rebuilding craze. Putting up three stage c.c. jobs to operate on all bands.

Two new 35-foot sticks have made their appearance at 5KL, with a consequent improvement in reports. 5JO has been off the air during the last month, but has not forsaken radio. He intends to go on 80 during the winter.

5RP is entertaining the BCL listener on 200 on Sundays. Bob uses a 50-watt bottle as a modulator, and the quality is f.b. 5WP is going to scrap his old 24-56 receiver in favour of s.s. super. 5RO, who has been QYL for some months, has found that

radio is the best friend after all. Bob made his reappearance on the air the other week with a three-stage c.c. rig. Receiver in use is an "Amateur Radio" 2-tube Electron coupled job.

SIGS WITH TONE AND SIGS WITHOUT.

By QRZ.

First of all, I must say that our South Australian friend was a trifle early with his remarks in last month's "A.R." I refer him to the notes in that issue, which were written prior to receipt of his letter.

New T signals inaugurated through QRZ running short of descriptive adjectives:—

T1 Power Leaks (a bit worse than PAC).
3FL (a bit wobbly too).
2KE and 5BM, dead heat for champion award.
(5GC just missed the bus here by coming on with good PDC on the day these notes were written.)

T2 PAC.
2BJ only one heard in this class.

T3 RAC (numerous varieties).
(a) Broad and rough.
3KT, 7KV, ZL3DU, ZL4FT.
(b) Ripply or rattly.
5FB, 2DK.
(c) Wobbly.
4EL was chased around the 20 mx band before I got his call.
5MV.
(d) Ord'nary (almost respectable)
2AJ. with fb fist too.
2XM, 2QJ, 2KT, 4DO.

T4 NDC to PDC (not quite respectable).
2ZI chirpy NDC.
3FB wobbly PDC.

I wonder if I would get any abuse if, instead of writing about these chaps, I just called them and said my piece?

Congrats., 2OH. Heard with fb PDC note.

5MW inclined to be a bit of an XU hound.

Heard 3BF on fone during DX hours, working 3DQ. Wasn't even good fone.

3CX could put an anchor on his tank coil or feeders, or something, by the sound of his note.

And now I must apologise to a station I accused of long CQ's. I actually heard W6AZC send 55 CQ's without signing. Can you beat it?

3FG had a funny sort of signal.

Before concluding I would like to say that these notes are not written with any personal vindictive feeling, but I really believe that I am expressing the general disapproval of the majority of VK hams, who like to hear decent signals.

73, etc.,

QRZ.

AUSTRALIAN CALLS HEARD between 18/11/33 and 28/2/34 at station ZSIH, "Oakvale," Oakhurst avenue, Rondebosch Cape, South Africa, are appended. Bracketed figures denote number of times station logged:—VK2, AH, BA, (3), NR, XU (2), JT, HW (4), OC (2), ZW (2), HC, JX (2), ER. VK3 HG, OW (3), TO, KX (2), OC (2), BQ, BJ, RJ (5), MR (4), GQ, WX, WL (5), VK4, RV (6), 4GK (5). WA, EL (2), BB (5), VK6FO (3). VK7JB (3), VK7CH, VK5, XK, DX, HW, RX, LX, MY, FM, GR (9), MU (2) LD (2), GW.

Heard by Miss Barbara Dunn, G6YL, England, January, 1934, 14MC, VK2NR, 3BJ, 3KX, 5JH. February, 1934, 7MC. VK2DY, VK2NG, 14MC. VK2, BA, ER, HW, NR, OC, PX, XU, ZH. VK3, BJ, GQ, HK, JJ, KX, MR, OC, RJ, WJ, WL, WY. VK4, BB, GK, RV, SM, VK5, FM, GR, LB, MU. VK6FO.

VICTORIAN QSL BUREAU

Cards for the fo'lowing stations and listeners are on hand at the above bureau, 23 Landale street, Box Hill, Victoria, and will be forwarded on receipt of stamped addressed envelope:—3BP, BR, CA, ER, FC, FM, GA, GU, GW, GX, JL, JN, JW, JY, KO, KQ, LP, NC, NG, NR, NT, OZ, PN, PZ, RN, RW, SK, UJ, VU, WK, WX, XO, XK, ZF, ZK, ZL, ZY. Messrs. Edgerton, Coghlan, Oliver, Henrickson. White, Nye, VKGH, VKHM, VKLY, Bennett, Lake, Mawman, VK3QSL.

According to a 28mc listener of long experience, this band should be worth a further tryout for DX at the present time, as signals from JND and XBO are coming through on 11 metres

at strengths between r5 to r7 every Sunday between 11 a.m. and 2 p.m. Melbourne time.

Hams taking "Island Cruises" touching Noumea should call on Charles Gaveau, 44 Rue de l'alma, where they will find some familiar equipment. At present the call is F8CVG. VK2YL has the honour of first QSO on January 25, whilst ever-consistent VK4GK had the second QSO. QSL manager VK2, James Corbin, is busy trying to fit out the Noumean with a correct prefix.

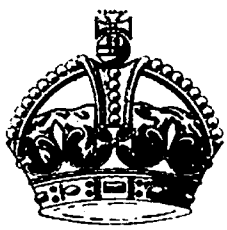
Hunter, of G2ZQ, complains that the following VK2 stations do not QSL, or rather, that is Hunter's experience of them:—VK2FQ (s'prised at you, Jack). VK2HQ, 2LX, 2LZ, 2PT, 2XU, 2XY, 2YR and 2ZW (look to it, Stan).

The second international DX competition of the U.R.E. (Spain) took place during the week-ends from March 24 to April 8. VK stations contacting Spanish amateurs during this test should send a QSL card quoting the code number received from the EA station, to the U.R.E. Apartado, 262 Madrid, by July 8. VK's are reminded that a fine diploma is awarded by the U.R.E. to the leading foreign station in each country. VK3WL, winner for Australia last year, is justly proud of the magnificent diploma awarded him.

During a brief visit to Melbourne during the third week of April, VK2ZW, Stan Grimmett, of Newcastle, visited as many hams as his limited time would permit. Melbourne hams were extremely gratified to meet this well-known personality from the black country.

VK3RJ, R. E. Jones, QSL Manager.

R.A.A.F. Wireless Reserve Notes



VMC

Total No. of Messages 181

Average per Station 11.25

VMC4

Total No. of Messages 53

Average per Station 10.6

7Z1

Total No. of Messages 51

FEDERAL NOTES BY THE C.O.

I was very fortunate this Easter in being able to personally visit another two Districts, namely, VMB and VMD. It has always been my firm belief that no other form of contact with a person can impress one more than a personal one. Letter writing and contacts over the air may establish a bond between two people, but there always lacks that "something" that is at once discovered when those two persons meet face to face. That is why the conventions that we have held to date have been such a success, not only from the Reserve point of view, but also from the point of view of the individuals in it. Every ham who has gone a mile or more to meet another brother realises that. When he returns home and again contacts that ham, they are more free to talk; in other words, they have that better understanding. Many petty differences are always arising, just through a word out of place in a letter or a QSO, because the author of them just doesn't realise the type of man at the other end. Amateur radio throughout the world would be one hundred times more firmly united if we could all meet one another. Of course, that is impossible.

In the Reserve we can do such a thing. We can have an annual convention in each District. And what a time the fellows do have when they all gather in the city to spend a week in each other's company. The country member is the one who appreciates it most. He can come to "town" on many occasions alone, but seldom has

the opportunity of associating with ALL those he has been contacting for months. VMC has shown the way, and has already had several happy annual conventions. It is to be hoped that other Districts will follow suit this year. An idea has been mooted that we should hold a gigantic convention in Melbourne during the Centenary in conjunction with Amateur Week. However, it remains to be seen what support is given to the suggestion which was broadcast to all members recently.

My visit to VMB proved very valuable, and afforded me an opportunity to give a talk to the majority of the metropolitan members on procedure and the Reserve organisation. 2Z1 and 2Z2 kindly arranged a meeting at 2Z2's shack, and a happy evening was spent clearing up some doubtful points. It was very gratifying to come away and feel that those present were filled with enthusiasm, and had a better knowledge of their duties, which will certainly spread to those who could not attend. In VMD I had the privilege of meeting 4Z1 and many W.I.A. men, and attended their annual meeting. Great interest was shown in a chat on the workings of the Reserve. and I again left with the feeling that the personal visit had promoted a better understanding.

The Reserve will certainly be called upon to co-operate in the Centenary Air Race next October, and plans are being drawn up to see if it is possible to give everyone something to do, although the work mainly rests with the Eastern States. Further announcements will be made as soon as we know what is expected of us.

THIRD DISTRICT NOTES.
(VK3UK—3ZI.)

The two new sections which have been formed have not yet commenced active work, due mainly to the fact that some of the members are not quite ready to start up. It is very much easier if every member in a section is starting off from the scratch mark together; if some start before others there is a tremendous amount of leeway to make up before all are on an even standard of efficiency.

VK3GC, one of our new stations, is transferring from Camperdown to Bairnsdale, and we wish him all possible luck in his new location. It is great news to hear that he is moving to Gippsland, as there has been a dearth of amateurs in that vitally important part of the State. 3C4 is our only active station down there at present, but there are a number of new hams in this region, and we have hopes of Gippsland being very well represented in the future.

3C4 was instrumental in putting over some great work, and handling a quantity of traffic when a Southampton made a forced landing in Lake Reeve, quite close to his QRA. 3D4, who is on a cruise to Java and the Islands, is apparently having a wonderful time, and has been able to meet a number of the VME and VMF boys as he passed through.

Our Commanding Officer, 1A1, is leaving shortly for New Zealand, and will be absent some months, so we hear. All members of VMC join with me in wishing him all success and good luck. We will keep a look-out for him from the ZL's, and perhaps he will be able to join in with our

3.5 mc nightly fone QSO's during the winter. 3ZI has not yet re-erected his gear in the new QRA, and in consequence has been out of touch with schedules this month. VMC has been running under the very able guidance of 3Z2.

We hear we are being fortunate enough to be getting three of VMG's crack operators into our ranks. Whilst commiserating with VMG in their loss of such fine stations, we cannot help congratulating ourselves on our gain. Welcome 7CH, 7CD and the new 3CS, and may you all have as happy and enjoyable a time as VMC members as we all have.

As this is Melbourne's Centenary year we want to make our convention an outstanding one, and to have as many Interstate members over for convention week as possible. Plans are proceeding apace, and next month we will be able to tell you the dates, so that Interstate stations can make their plans accordingly to make their trip to VIM coincide with the convention. We venture to say that at no other time will one be able to meet so many hams together in Melbourne.

FIFTH DISTRICT NOTES.

By 5Z1 (VK5SU).

The Reserve is beginning to make headway now, and more members are active.

5MY and 5RH have been active and are watching every mail for notification of their enrolment. 5A2, at Alice Springs, has not been able to hear the broadcasts on 80 mx, and it is probable that the first section will shift to 7317 kcs. in the near future. Three broadcasts have now been given, but many members of both sections have yet to make their appearance at this watch.

It is hoped that all members will devote some time each day to the mastering of their training manual.

Just think, chaps, how wonderful it would be to have all that procedure in your head. and not have to jump for the manual every time some other chap tries to trick you with some knotty point in the procedure that he has just learnt.

Another letter is to be forwarded to each member explaining fully the working of the reserve, and outlining schedules, etc. It is hoped that you will co-operate and keep all schedules, and perhaps one month when the VMC chaps are unwary we may capture the traffic totals.

3D4 passed through Adelaide recently, and was shown around by 5MY and 5Z1.

SIXTH DISTRICT NOTES.

By 6Z1-6MN.

Since last month another call sign has come along, namely 6A2, and Jack Mead paraded on the air on the first of the month—a full-blown member. Commencing in May, this District will be making a shift to 80 metres for training. On Easter Monday 3A4 passed through Perth on his way to the East on a holiday jaunt. Unfortunately 6Z1 was absent from town, and the job of showing 3A4 around was left in the hands of 6Z2, who made him known to many other lads. VK6FM has come to life again after being off the air for five months owing to the hot weather, and has sent in an application for membership. VK6BO complains that several newly-installed refrigerators have made reception unbearable at times for him in Carnarvon. However, that has not stopped him sending in an application for membership. The new training manual has been received with acclamation and delight. 6Z1 was off the air for 14 days owing to duties at the local B station. but greatly prefers amateur radio! VK6LR, RW, RA. etc., are awaiting call signs. VK6FL passed through Perth for Albany, where he is going to be very helpful in the Reserve network.

Traffic Totals.—6Z1, 35; 6Z2, 3; 6A2, 8; 6RA, 25.

SEVENTH DISTRICT NOTES.

By 7Z1-7RC.

With only four members in VMG at present, little work has been carried out. However, those four have received the new training manual and are getting into shape with relaying, etc.

VMG1 have only two members, the S/L and 7A2, and VFG2 only one, 7B1. VK7CH has been keeping watch for 7B1, and is enrolling, also VK7NC. VK7AH, and we have hopes of VK7JH.

Very little active work in the way of traffic handling has been done in VMG1 owing to lack of members. 7A1 has been busy with a new speech

amplifier, using a pair of 2A3's. 7A2 has handled a little traffic, and VK7LZ is still waiting to be sworn in.

In VMG2 the weekly B/C's have been copied by VK7AH and VK7NC, but owing to their not knowing any procedure at all they are at a big disadvantage and cannot handle traffic. VK7CH has handled and relayed all the traffic for 7B1, while 7B1 was on holidays.

Just prior to these notes being written word was received from VK7CH that he has been transferred to Melbourne, and will be leaving almost immediately, so that makes our list of active stations even less than before. Although not sworn in yet, VK7CH was one of our foremost operators, having been in the Reserve some years ago, and could put that traffic through very smartly indeed. Two of our members have now gone to Melbourne to reside, and they are both a distinct loss to VMG. VK7CH is not taking any gear with him for the present, as he is not sure of his movements for a while, but hopes to get on the air later from VMC, and will probably join up again with the Reserve in VMC. You will have all of our good operators shortly, VMC!

It had been planned to have a contest before June, and present the winner of it with a silver cup at the annual W.I.A. dinner and meeting, to be held in June; but that appears to be impossible now owing to losing two members.

Traffic Totals.—7A1, 34; 7A2, 17; 7Z1, 51; 7CH, 13.

HARMONIC

A 240 volt 15 watt lamp may be used as an emergency plate milliammeter. A Philips pilot lamp will start to glow when passing 10 mils, and will reach full brilliancy at 60 mils. Don't leave it in circuit permanently, however, as the voltage drop is considerable.—VK3AH.

Tune your BCL set to the following stations and have the detector oscillating strongly. By picking off the fourth harmonics in your frequency meter or monitor, a reliable method of calibration is obtainable:—

Station.	4th Harmonic (kc.).
2BL	3420
6PR	3520
7HO	3560
3MA	3600
4RK	3640
3UZ	3720
2GB	3800
5DN	3840
3BO	3880
6BY	3920
4GR	4000

—VK3AH.

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Two RCA UX852 Radiotrons. Write VK6NO.

---

80 metre xtals ground to any part of the band. Tested to 50 watts input, 15/ each. Call or write, VK3UH, 517 Lower Malvern rd., Glen Iris, SC6, Victoria.

Tubes.—Types TB04/10 and DET, for sale cheap. Apply VK3WY, 18 Andries st., Sth Camberwell, E.6, Victoria.

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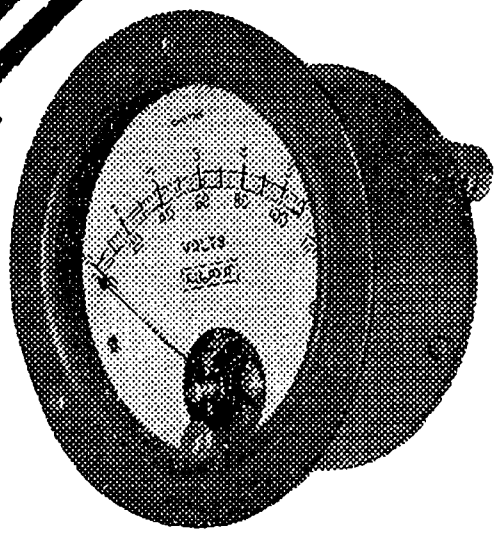
For energetic ham with AOPC or better, to assist in general store at Alice Springs. State experience and wages required. Apply care VK3ML before 15/5/34.



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AMATEUR RADIO

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PRICE 6D

JUNE, 1934

"AMATEUR RADIO"

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INDEX

All Communications and MSS. should be forwarded to the Editor, "Amateur Radio," Box 2, P.O., South Melbourne.

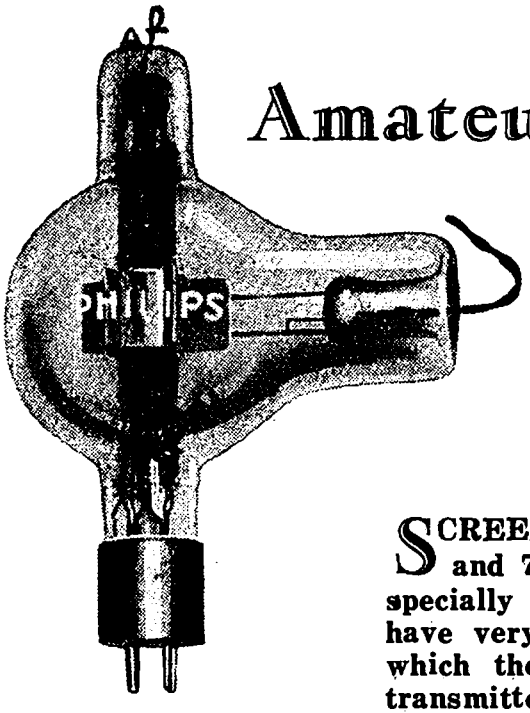
Subscription to "Amateur Radio" is 6/- per Annum (Post Free), paid in advance.

Should you not reoelve your copy of "Amateur Radio," notify your Divisional Secretary at once.

Screen Grid Valves

For

Amateur Transmitters



½ of actual size.

Types:
QB 2/75, QC 05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A.

Type.	Screen Grid Valves. OC 05/15.	QB 2/75
Filament voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam of bulb	50	100
Max. length	160	210

*Approximate values.

PHILIPS

TRANSMITTING VALVES

EDITORIAL

JUNE! As the sixth month rolls up on the calendar one of the responsibilities of every serious-minded member of the W.I.A. should come to his mind. For, before 30 days are past, his will be the duty to choose his council for the ensuing twelve months, to vote for twelve men whom he considers worthy and capable of guiding his institute to the greatest advantage. It is a responsibility that is very real, and every member's ballot form should only be filled in after a mature consideration of the merit of each candidate submitting himself for election. There is nothing worse than an inactive or apathetic councillor. Not only is he not pulling his weight as he should, but also he is occupying the chair which might have been filled by a man of perception and enthusiasm. An inactive councillor is principally a reflection on the poor judgment of those who have elected him.

In the W.I.A. our form of government is essentially democratic. The thing that is at the same time the strength and yet the weakness of a democracy is that the voting power is solely in the hands of the individual, and the fact which can make a democracy approach most nearly the Utopian form of government is to have an intelligent voting membership. On the other hand, a democracy presents a rather sorry spectacle if its members either vote carelessly or fail to vote at all.

Every ham gives a good deal of serious consideration to the matter of rebuilding his station, summing up the pros and cons of all systems, etc., and finally deciding how he can use his gear to the best advantage, so as to obtain maximum results. If he finds, after testing and after a number of QSO's, that he has not achieved the best possible results, he will incorporate the necessary changes in his next rebuild. We trust our readers will excuse us resorting to a simile, but it appears a rather apt one. The time of rebuilding his station is election time, and his finished station is the council he elects. If he feels the maximum results are not being achieved it is his duty to find out why, and then vote in accordance with his changed views at the next election. Remember, change is not necessarily progress, but there can be no progress without change.

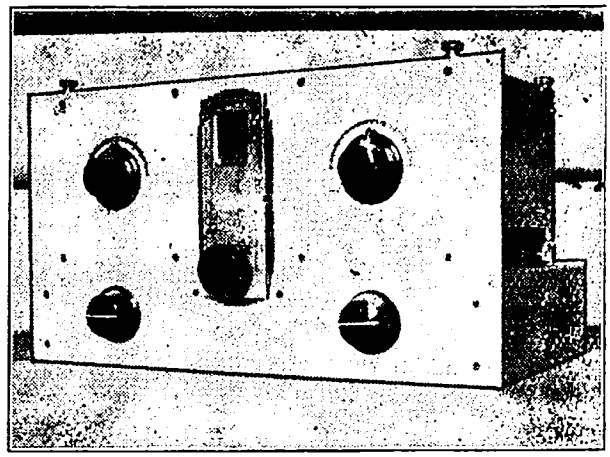
The change that is essential in us all to-day is to take a lively, intelligent, red-blooded interest in all the doings of our institute and its leaders. We take a tremendous interest in that station of ours; then isn't it sane and reasonable that we should do the same for the organisation which is the hub around which our wheel of radio activity revolves?

When your councillors are elected your job is still as important as it was when you voted for them, if you want progress in your institute. Follow their policy; if you don't like it see your councillors. If they don't respond to your ideas, change them at the next election. If you can't change them it's because you are in the minority, and most other members don't share your views. In that case you are not entitled to prevail. You can be assured that if your ideas are sound, the majority will agree with you, and there will be the desired change.

This month there is a job which is 100 per cent. up to you as a member of the W.I.A. Your councillors or the ham in the next block cannot lift a finger to help you. When you get your ballot paper VOTE, and VOTE INTELLIGENTLY, so that you can have the satisfaction of feeling you have done your part towards furthering and bettering your institute.

Our Centenary Receiver

By VK3WL and VK3OC.



A receiver to take us comfortably through those torrid week-ends of October, 1934, must of necessity be one possessing a high order of sensitivity and selectivity. The various bands of the amateur spectrum should be literally throbbing with etherical vibration; conditions will be as never before. Therefore, it behoves us all to look warily to our earpieces.

Receivers taken by the large may be grouped under four general headlines—autodynes with and without pre-R.F. amplification, super-heterodynes with and without piezo-electric quartz filters. The autodyne without pre-R.F. amplification, detector and one (or two) can be quickly ruled out. Our receiver must possess real sensitivity, and, although this can be obtained with a single tube, every other desirable quality in a receiver must be sacrificed in the process. Remember, we are discussing conditions which will obtain in October, 1934.

We are now left with three possible types, and the fact that the question of cost against performance must loom largely. Unquestionably the best receiver you could build would be a correctly designed and efficiently adjusted super, with a pre-selector or R.F. stage and quartz filter. But (and, please, be honest, mister) could you do all those things, and, granting that you could, would you ever in Australia really need the selectivity available? If you did need it, could you afford such a receiver, and would it be worth the cost? Very few of us could survive this process of elimination, and even so, with the receiver on the job, we find we have a merciless machine producing in the output nothing but the signal or signals audible on a definite frequency, and that only. with unswerving constancy.

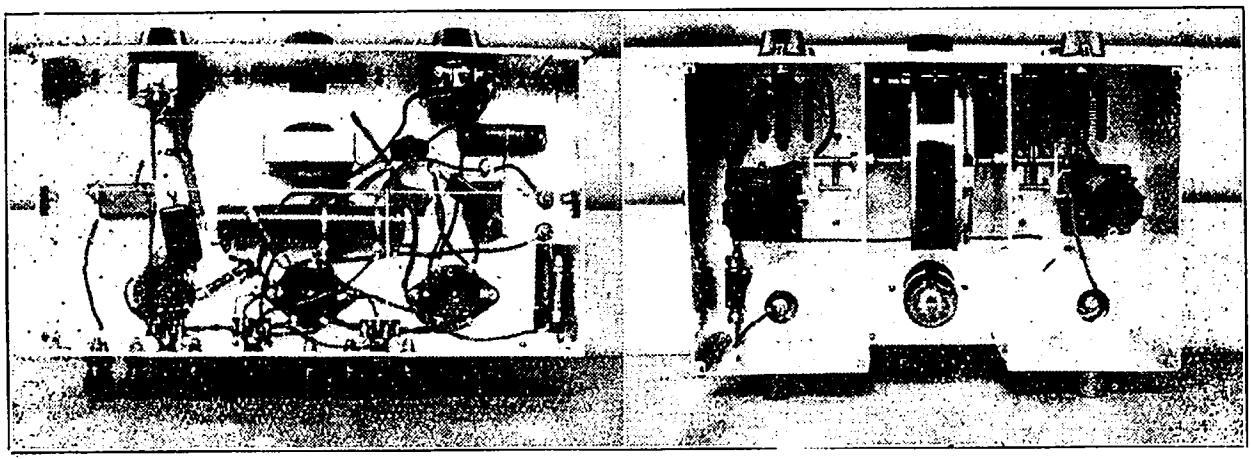
My friend ZL4AI, winner of the B.E.R.U. challenge trophy in 1933, and ZL's premier contest ham, whose chosen profession is electrical engineering, is the possessor of such a receiver. He has made the alarming discovery that there are practically no signals worthy of such an instrument, and that the steadiest of steady signals actually do creep too much. If this ultimate instrument is so adjusted as to give its maximum selectivity response, one needs the ears of a cat and the delicacy of hand necessary to an operative surgeon, otherwise the signal has disappeared. If you are the fortunate possessor of such rare qualities will you need such a receiver?

So much for the pitfalls surrounding perfection. It has been my privilege to handle a few of the type of SS super which employs but five tubes, with a regenerative IF stage to obtain SS characteristics. With the exception of the fact that it is possible to listen over most of the band on which your transmitter is tuned, whilst actually keying, I feel positive that this

type of receiver is no better than a well designed and constructed autodyne employing a tuned RF stage. A laboratory selectivity test would perhaps prove my statement to be incorrect, but I am sure no aural test would do so. The TRF set has definitely much greater gain, and, although this may appear to be heresy at first glance, it must be remembered that the SS set has but three tubes working, the other two (the oscillators) being but necessary appendages.

Balancing difficulty of construction, adjustment, cost and what can be gotten from such a super, against the similar items of the TRF set we intend to describe, we honestly believe the TRF set wins rather easily. I used such a receiver in the recent ARRL test, under local conditions, which would be difficult to make worse. We desired to test the receiver under these conditions, and this desire was really fulfilled (VK3MR can vouch for this). Ninety per cent. of the QSO's in that test were with stations between 7000 and 7080 KC, an area literally teeming with Yanks and others. Our ultimate super would have performed better than the TRF set perhaps, but I am certain that nothing else would. This set definitely has got selectivity and sensitivity to spare. If you do decide to build the receiver as described, you may expect your results to be in direct ratio to the care you take in construction and adjustment. The receiver I used in the ARRL test was not built by an experienced ham, but by a senior P.M.G. mechanic friend of mine, who had then had no experience on the higher frequencies. This shows that with care in construction the results may be duplicated.

I have handled quite a few receivers of this type, some I have built myself, and others I have not. They all followed the ratio previously mentioned—results equal care. The receiver as illustrated and described is a delight to handle, and no one should ever desire a more efficient instrument. It was built around six volt type tubes, making AC/DC operation optional by means of suitable switches, and consequently is ideal for country hams. The three tubes employed draw approximately one amp. at six volts, and if AC mains are available no better "B" supply could be obtained than a Philips eliminator. These are obtainable at ridiculous prices, and one would fit in nicely with the transmitter for bias to medium power stages. If it is to be used in a district where no AC is available 100 volts of "B" batteries have been found to give the highest grade of performance possible with the set. The RF and detector stages are ganged, and if the values specified are approximately adhered to, no trouble will be experienced in out of line tuning. High C is used in both tuned circuits, and an electron coupled detector. It would be superfluous to enumerate all the features that go to make this receiver the splendid performer that it is; suffice it to say that if you do depart from the values and details given—please do so intelligently, otherwise we take no responsibility for your final result. Everything in the arrangement has had to earn its place, and nothing is superfluous.



The preamble by VK3WL now brings us to the constructional details of the receiver, and by way of a start we would both like it on record that we claim no originality for the design. It first appeared in "QST," January, 1933, under the title of "Rationalising the Autodyne," by George Grammer, and as most hams will have access to this issue we would refer them to it for fuller technical details, space not permitting a complete re-hash here.

Reference to the illustrations will show that the only real change has been made constructionally—that is, the tuning dial has been placed in the centre, and the cans containing the detector and RF stage on either side instead of next door, as in the original. This arrangement may or may not be an improvement, as, although there is less tendency to interlocking on account of the physical separation of the stages, it necessitates the use of a long plate lead to the RF stage. However, if this is run from can to can, and above the base, no trouble will be experienced. This lead is shown plainly on one of the photos.

Some slight latitude is permissible in the sizes of the receiver generally, but particular attention must be given to proper shielding and rigid construction. On the set illustrated the panel is ⅛ inch aluminium, measuring 7½ by 14 inches, the base 3-32 aluminium 7½ by 13½ by 2½ inches deep, and the cans 1-16 alimmium 7¼ by 4¼ by 4¾ inches high. Quarter inch square brass rods are used in the construction of the cans, and are bolted to the panel and the base by ⅛ inch machine screws, having previously been tapped. Some little trouble may be found in making a nice fitting job, but remember the old adage about patience and perseverance.

It may be necessary to use some form of flexible coupling between the dial and tuning condensers, but as these couplings are not easily obtained now, a direct drive (as illustrated) works very well if the condensers are properly lined up, and the shafts extended.

A complete list of components is given with the circuit diagram. Fig. 1, and all values should be closely duplicated. The impedance L5 may be either an audio transformer. with the primary and secondary windings in series, or a special choke, which may be obtained very cheaply from one of our advertisers, and which works very well.

The National drum dial and the Hammerlund 5-plate midget condensers used are, unfortunately, not available in Australia, but any other good drum dial and midget condensers will be found equally satisfactory, and will not affect the layout to any extent. If greater band spread is desired use 3-plate midgets. The padding or band spreading condensers are 23 plate, and no trouble should be experienced in setting these for various bands. As the RF padder is tuned through reasonance an increase in signal strength is at once noticed, together with a slight change in the beat note. The setting holds good over the complete dial range.

A Hartley circuit is used in the detector, although with six prong sockets the ordinary tickler circuit could be used. We have found the Hartley entirely satisfactory, providing that care is taken in obtaining the right position for the tap to the cathode. Although not extremely critical, the right place is a matter of parts of a turn, so as to be able to control the detector with reasonable values of screen voltage.

In order to be able to bring the padders back to the same position after changing bands, some indicator is desirable. I have found that if the panel has been "cured" by immersion in a fairly strong caustic soda solution it will take India ink very well, hence the pretty semi-circles shown in the photo. You could also add a heart with an arrow through it, and the YL's initials if you feel artistic.

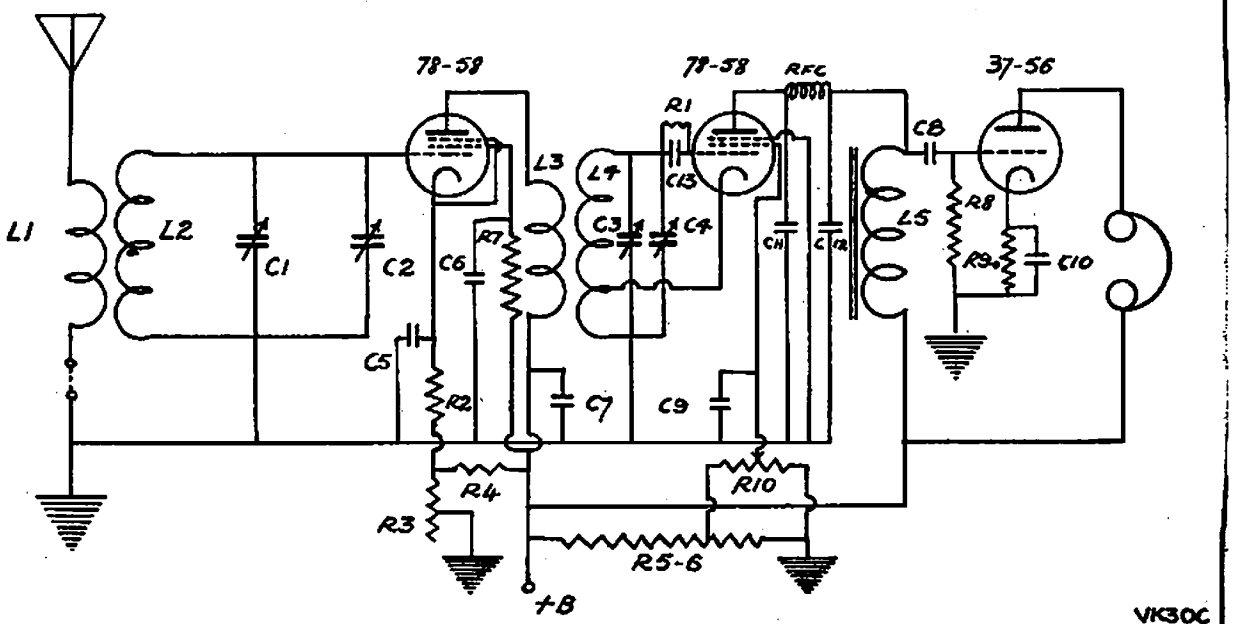
In wiring up it is essential that all RF grounds be brought to earth at a common point. The idea used here was to run one wire the whole length of the base, and bring all earth connections to this. Reference to the photo taken from underneath will show this lead plainly.

As 3WL has already mentioned, 6-volt tubes were used in this version. All that is then necessary for battery operation is to incorporate three double pole toggle switches (in this case on the back), one to break both filament leads, one to cut out the voltage divider, and one to break the "B"

leads. The tap on the voltage divider to potentiometer R10 is brought out to a terminal, and connected to positive 50 volts "B" when batteries are used. These are not shown in Fig. 1. Other arrangements will, of course, suggest themselves to the constructor.

In conclusion, both 3WL and myself will be glad to hear from anyone building up this job, and pleased to furnish any further information required. Although the receiver as it stands is not a panacea for all ills, it is, when properly constructed, a definite improvement on the average ham receiver. The lift is there—more than normally required—and the selectivity, especially with the RF gain control cut back, is excellent. What more can we expect from three tubes?

FIG. 1.



Values, Fig. 1.

C1, 3—5 or 3 plate midget condensers.
C2, 4—23 plate midget condensers.
C5, 6, 7, 8—.01 mfd. mica condensers.
C9, 10—.5 mfd. non-inductive condensers.
C11, 12—100 mfd. mica condensers.
C13—250 mfd. mica condensers.
R1—5 megohm resistor.
R2—250 ohms, 2 watt.
R3—10,000 ohm wire-wound pot.
R4—50,000 ohm, 2 watt.
R5, 6—20,000 ohm voltage divider.
R7—100,000 ohm, 1 watt.
R8—1 megohm.
R9—2000 ohms, 1 watt.
R10—50,000 ohm potentiometer.

Approximate Coil Data, Fig. 1.

Coils wound on Marquis formers, L1, L2, on same form, L3, L4, on same form. Primaries 30 dsc in all cases. 3500 kc grid coils 20 dsc, close wound. 7000 and 14,000 kc grid coils wound with 18 enamelled wire, and spaced. Spacing between coils about $\frac{1}{8}$ inch. Taps on detector coil from ground end.

Band.	L1.	L2.	L3.	L4.	Tap.
3,500	8	32	24	32	1st
7,000	6	13	11	13	$\frac{1}{2}$
14,000	4	6	5	6	$\frac{1}{4}$

HARMONICS.

The qra of FB8VX, as given on page 26 of the March issue of "A.R." is incorrect. The correct qra of this consistently received station is: —Prince Vinh-san, 67 Rue Sainte Anne, Saint Denis, Reunion Island.

FB81A is L. T. Rene Bertrand, Tanarive, Madagascar.

BERS—195 (Eric Trebilcock, Moonta, S.A.) wants to know QRA's of F9AAC es VP2RM, both logged on 7 me. in VK5.

Heard on 3500 KC on May 15 a self-excited station, using a 500 cycle generator on phone. Could not quite catch the call—3 something H.

W6BVZ will be calling for VK stations on 3675KC on June 15, 16, 17, 22, 23, 24, 29, 30, July 1, at 3.30 to 4.30 p.m., and 5 p.m. to 6 p.m. Keep a look-out for him.

Geo. Thompson (3TH) informs us with much regret that his proposed visit to Kerang during the King's Birthday week-end will not eventuate owing to extreme pressure of business at that time. Sorry, m' lads, but will "come up and see you some time."

STATION DESCRIPTION.

VK7CH.

As the op at VK7CH has been transferred to the mainland, and as station VK7CH is now only a memory, a short history of the station may be of interest to some of those many hams who have QSO'd "Snowy" at

various times during the last seven years.

VK7CH or OA7CH was licensed on July 12, 1927, and the first QSO was with a local station the same day. The transmitter was then the old reliable Hartley, with some 200 volts from slop jars to a UX201A. Later in the same year this was increased to 400 volts, and a UX210 installed, and all Continents were worked. The next transmitter was a TPTG, which was completed early in 1928. This transmitter gave splendid results on the 40, 30 and 20 metre bands, and remained in use until December, 1930, when a two-stage c.c. was built. However, this did not prove very satisfactory, and pending the installation of a larger one, the TPTG was once again brought into service, and, being such a consistent performer, it remained for the next twelve months. From that time until the present, except for a few months while PP was being investigated, various three-stage xtal rigs have been in use, the last line-up being 47 oscillator, 46 doubler and one or two E406's in the final stage.

The ten metre band was not neglected, the best two-way work being first Tas.-Aust. QSO on that band, when 500 volts on two 245's in a PP circuit produced the signals.

For receiving various types of two-valvers were used, the last being AC, using 56 det. and 56 audio. More than this was never used, and was found quite sufficient to bring in plenty of DX.

For this location a full wave zepp, running N.W. by S.E. proved the most efficient, and has been in constant use for the last three or four years.

Sixty-two countries have been worked.

MANAGING A QSL BUREAU.

By VK3RJ.

Many years of management of a busy QSL Bureau has not proved barren of experiences, grave and gay, pleasant and exasperating, humorous and not quite so. The seeming monotony of dealing with thousands of cards annually has constantly been punctuated by interludes, and high-spots falling within the categories aforementioned.

However, it is my intention to endeavour to convey to you in this short article just what the management of a QSL Bureau means, what work is entailed, and what care is bestowed on yours cards, the system adopted, the endless attention to detail, and, lastly, but most important of all, a few hints whereby patrons of bureaux (aren't we all?) may lighten the burden and expedite the handling of their wall-paper. Efficient management of a bureau of any size and importance means that the manager must give many of his otherwise leisure hours to the duties. Procrastination and lack of systematic handling have wrecked many a bureau, and the efficiency falls in direct ratio to the lack of energy displayed. Admittedly it is heartbreaking to arrive home and find a stack of cards and correspondence awaiting attention just when DX is coming in well or when some article in a journal excites one's experimental leanings and the hands

itch for the bug, the soldering iron or pliers.

Briefly, the system of handling that has placed the VK3 Bureau on an efficient basis, in the forefront of world bureaux, and earned it world-wide approbation, is as follows:—

The morning mail arrives. Maybe the postman awaits without to collect the surcharge on an insufficiently prepaid letter or packet. A hasty glance at the offending article as to postmark and handwriting suffices as to whether the tax will be paid or the article refused. If these details indicate that the sender is an old offender either through parsimony or carelessness, then the article is refused, and it will then be returned by the Postal Department to the sender, who, under pain of a statutory penalty not exceeding £2, must pay the deficient postage. This bureau never refuses to accept the first insufficiently prepaid article sent it by any particular ham, and the sender is acquainted of his remissness. Should the advice tendered not be heeded, then the corrective treatment occasioned by the refusal to accept subsequent articles has been found to be the best medicine.

After disposing of the postman the mail is roughly sorted. Articles obviously containing cards are laid aside for later attention. Letters claiming cards, or with a request for information, etc., are dealt with first. The requests contained in letters reaching the bureau cover a range as wide as some of the signals cited by "QRZ." We have the request of the country ham for train or boat information, that of another country ham to make purchases of this and that for him or his family. One such request made the writer feel thankful that he had a YF to deputise for him at a women's department of a city store. Again, a listener writes stating he heard a signal on the 7 mc band! He mentions that his receiving ability as yet is only 20 words per minute! but he heard that station signing VK3C something. Could I identify the station for him?!! Yet another asks who is this "CQ" all the stations are calling, and could the Qsl manager arrange some slow Morse practice for him over the air. Then the foreign ham writes that he worked VK2——last year, but has not yet received a card. Could I shake up the VK2? Again, the foreigner who knows he has some relatives living in Melbourne by name of Otoole; says there won't be many Otooles in Melbourne, and could I locate and look them up? And then the Yank asking could I forward him an "aboriginal's skull" in exchange for a fb set of birds' eggs!!!! And another local bright boy, just beginning to raise an interest in ham radio, sees a list of cards on hand in the QSL notes of "Amateur Radio," and writes me for "just one of each" to start off his collection! Truly, this job has its humorous side.

After the correspondence is cleaned up comes the bi-weekly attack on the bundles of cards previous laid aside. These are sorted into "inward" and "outward" bundles. Inward cards are dealt with first, and are stamped and counted, the VK3 being kept aside and the cards for other States sorted into their respective divisions. The VK3 are then sorted into the alphabetical files, separate divisions being used for country centres possessing two or more hams.

A start is then made on the "outward" cards. They are first counted to see if correct charges have been enclosed, and for statistical purposes, and then stamped and sorted into their respective countries and placed in the "outward" list. Perhaps the counting of cards could be dispensed with, but it is interesting to be able to see at a glance the number of cards handled in any given time. The figures for the bureau since its inception in 1931 are:—

Year.	Outward.	Inward.	Total.
1931	5,792	3,998	9,790
1932	9,706	8,627	18,333
1933	9,157	9,529	18,686
1934 (to date)	3,498	4,002	7,500
Grand Totals	28,153	26,156	54,309

I cannot tell you the total acreage their area would cover, or how many times around the earth they would reach if placed end to end, but these figures provide an interesting study and should effectively silence those who continually bemoan that hams do not QSL. Peculiarly, the inward and outward totals roughly balance themselves, proving genuine reciprocity.

Twice monthly despatches of Interstate cards are sent out, but the real work commences about the 26th of the month, and the avalanche of cards. inward and outward, continues until

around the 10th of the succeeding month. Towards the end of the month the VK3 files are inspected, and the contents subdivided into the following groups:—(1) Cards for country members; (2) cards for members attending the monthly Divisional meeting; (3) cards for hams desiring their cards posted; (4) cards for non-members, listeners and metropolitan members too disinterested to attend the monthly meetings. This last group is the bugbear of the bureau, causing endless repetition of work and clogging of the files, and among this group are the hams who do not value cards and those too miserable to forward postage to obtain their cards. After the distribution of group 2, the cards of country members and those in group 3 are posted, due entries of the postage on the latter being made in the ledger. Many of this group keep a credit balance at the bureau, necessitating bookkeeping, but facilitating the despatch of their cards and keeping the files more open. When the VK3 are thus cleaned up attention is transferred to the overseas cards, and these are despatched, together with another despatch of Interstate cards. Some idea of the work entailed may be gleaned from the fact that the usual end of month postings average around 100 letters and packets, and cost £1/10/ for postage. These have to be addressed, weighed, correct postage affixed, and then posted.

During the brief respite between the 10th and the 26th of the month the QSL manager enjoys himself by occasionally going on the air and by revising the VK3 Qra list, from the monthly supplement issued by the P.M.G's Department. In passing, it might be mentioned that the old adage, "It is cheaper to move than to pay board," has never been better exemplified than in the case of hams, as it is not uncommon for a ham to change his QRA as often as five times a year. Then the list of overseas bureaux constantly needs revision. This done, the VK3 files are again inspected and cards for pirate and unlisted stations removed, together with any that have lain six months at the bureau. All these are returned with a suitable endorsement to their senders. A poignant and painful reminder of the "end of all flesh" is brought to mind by the arrival from overseas from time to time of cards for hams and listeners deceased since the QSO took place, or the report was sent out.

In conclusion, and braving the wrath of the Editor for utilising such an amount of valuable space, I would like to bring under notice a few hints and rules designed to promote smooth and efficient working of all bureaux. They are:—

Inward Cards.

(1) Send your cards regularly. If possible, keep a supply of stamped envelopes at the bureau—the manager will not use them for his private correspondence.
(2) Send envelopes approximately 6 in. x 4 in. Smaller envelopes necessitate folding your cards. Larger envelopes do not fit the files.

Outward Cards.

(1) Send your cards regularly.
(2) Affix correct postage to your letter or packet. If a packet, do not enclose any letter, and do not seal against inspection, otherwise letter rate applies. Tying neatly with string is the sensible method.
(3) Enclose correct QSL charges—no more, no less.
(4) Write plainly and print the call sign. Sharpened matches seem to be popular as pens, but the resultant hieroglyphics consume valuable time in deciphering.
(5) Write the call sign on the back of the card—QRA, too, if known.
(6) Group all cards for the same country or State.

Observation of the above simple rules will earn the undying gratitude of your QSL manager, speed up the handling of your cards, and make more time available for the QSL manager to QSO you.

Taking into consideration the sorting, counting, stamping, despatch and distribution of cards, revision of lists and QRA's, voluminous correspondence and time entailed in carrying out of requests of country and overseas hams the handling of every 100 cards averages out at occupying nearly two hours of your QSL manager's limited time. The bureaux throughout Australasia are efficiently managed by hams for your benefit, both as to saving of your time and your money. It is up to you to do all in your power to lighten their job. Observance of the above rules will help LOTS.

VICTORIAN QSL BUREAU.

Notes for June.

Cards are on hand at the above bureau, 23 Landale street, Box Hill, Victoria, for the following stations:—VK3BC, BP, BR, BX, CA, CS, EG, ER, ET, FC, FM, GA, GU, GW, JL, JN, JW, KO, LP, LZ, MM, NC, NG, OX, OZ, PK, PN, PZ, QJ, QX, RN, RW, UJ, VU, WD, WK, WX, XK, XO, XQ, YR, YF, ZG, ZK, ZY, ZL.

The above cards will be forwarded on receipt of stamped envelope.

Information has been received that a bureau not connected with the W.I.A. or A.R.A. has been set up in another State. As W.I.A. bureaux are functioning well in all States, stations are warned against dealing with unauthorised bureaux, as no reciprocity exists between these and W.I.A. bureaux.

A supply of Centenary stickers, for attachment to DX cards, is available at the bureau, and quantities of the stickers will be forwarded to any station on receipt of stamped envelope.

We regret to chronicle that VK3XQ (A. Baldock), while riding a bicycle, tried conclusions with a motor car and sustained injuries sufficiently severe as to incapacitate him for some weeks. He is at present convalescing at the Melbourne Hospital Convalescent Home at Caulfield, and would be pleased to receive a visit from any ham. We wish him a complete recovery, and a speedy return on the air.

Stations are reminded that sending cards to unlisted Japs. is a waste of time and money, as these cards are invariably returned with the usual polite slip on the back. Although some of these stations are now licensed, the remainder are merely "pirates."

Recently a number of stations have appeared on the air signing F3 calls. These are located in France, and it is believed that F3 call signs are being issued by the French authorities.

FB8VX is situated in the Reunion Islands, not Madagascar as is popularly supposed. He claims royal blood, and is always keen to work and qsl VK stations.

R. E. Jones, VK3RJ,
Qsl. Manager.

Harmonics

Any ham desiring to qsl W4MS may do so via VK2AP, who will also guarantee that a card is forthcoming to any ham who has not received a qsl from W4MS.

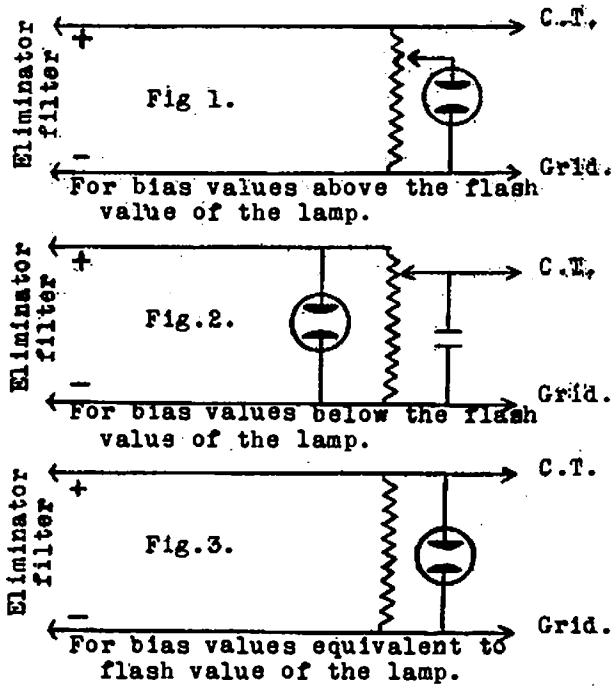
VK3LN recently wanted a crystal on 190 metres. He purchased a pebble for 1/. and upon testing it found that it oscillated strongly on the desired frequency without any grinding. Wish that 3500 KC xtals could be obtained like that.

VK3YJ is frequently heard calling VK2ET, Canberra, on fone and playing sentimental records. It appears that Geoff has been receiving T9 QSA5 R max reports from a YL in Canberra, so perhaps that accounts for it.

STABILISED "B" ELIMINATOR BIAS FOR R.F. AMPLIIERS.

By VK2ER.

The following is a method of obtaining reasonable stable bias for a new final amplifier at VK2ER. It was designed to bias the P.A. to cut off and allow keying in the buffer stage, and is a large improvement on straight eliminator bias, where the bias required is in the region of 150 volts. The stabilising element is an Osglim bulb, which was obtained from B.G.E. Co. The bulb was supplied without the base resistor, and has a flash value of between 140 and 170 volts, according to whether the plate or spiral is made positive.



If the bias required is approximately that of the flash value of the bulb it can be connected as in Fig. 13.

When the P.A. is excited the grid current merely bypasses through the bulb. For bias values above and below the flash value the circuits of Figs. 1 and 2 may be applied with, of course, not quite such good regulation, but still better than without the bulb.

A little figuring and sketching will readily adapt this device to stabilise within reasonable limits any rectified bias supply over about 100 volts. In any case below this value batteries are not so expensive as eliminators.

VK3 SECTION NOTES

ANNUAL ELECTION.

As this issue goes to press we hear officially that the great day, about which your magazine staff have been writing so much, draws near.

The annual election of W.I.A., Vic. div., office-bearers takes place on July 18 at 8 p.m. in the club rooms. This year the retiring council would be gratified to see a poll returning 100 per cent. of the possible votes. There is no reason why this should not be so, particularly if those of you who have a vote have read the editorials for April, and the current issue, especially the latter.

In an effort to help achieve the above 100 per cent. object we shall herewith endeavour to give a few hints on how to nominate your candidate and how to vote for him.

Nominations should be written out as shown below. The proposed candidate and those nominating must be financial full members. The nomination form is self explanatory, viz.,:—

To the Secretary, W.I.A., Vic. Div.

Sir,—

We.....(John Smith)
of..... (Brunswick)
and
.....(William Brown)
..... (Footscray)
hereby nominate
Mr. ..... (Robert Burns)
of ..... (Essendon)
as a candidate for election to the council of the above Institute.

Dated this.....day of.....1934.

Signed.....(John Smith).

Signed.....(W. Brown).

I.....(R. Burns), the above nominated candidate, hereby consent to act on the council of the above institute if elected.

Signed.....(R. Burns).

It is positively essential that nominations be in the hands of the secretary not later than June 27 (and we hope the mail bag is full).

Ballot Papers.—On or before July 8 financial full members will receive a ballot paper, which must be duly attended to in the manner prescribed therein, and then returned to the secretary W.I.A., Vic. Div., before noon on July 17.

The magazine committee sincerely hope that after the two editorials given on elections, those associate members who read them will now wish that they were full members (and its only another 4/, too. If the writer does not damp his enthusiasm this article will surely develop into another effort to stir up a riot on July 18).

The president for 1934-5 will be elected at the general meeting, and you should use your vote whether in person or by proxy. If you are not able to be present at the general meeting on July 18 send along your proxy in the possession of one of your friends as set out below, viz.:—

I.....(Alan Cox), a full member of the institute, hereby appoint Mr. ..... (Bill Jones), also a full member of the institute, to act for me as my proxy, and in my name to do all things which I myself, being present, could do at the meeting of the institute to be held at .....on the 18th day July, 1934.

Signed.....(Alan Cox)

Witness.....(Sandy McNab)

Now, here is an opportunity to show your individual interest, whether you are a student, associate or full member. The council would sincerely appreciate applications for the positions of secretary and treasurer, and all members are being given the opportunity to apply for the positions. The applications will receive the jurisdiction of the incoming council, and, of course, all applications will be dealt with in strictest confidence.

The institute wants a "live" executive. Here is the opportunity for that person who is not available for council membership, but who feels he can really be of active service to his fellow-amateurs of the W.I.A.

Key Section

(Conducted by L. T. Powers, VK3PS.)

These notes are actually written from Nairacoorte, S.A., as 3PS is spending a couple of weeks roaming round, and not having the notes taken at the last K.P. meeting there is not much about the Melbourne gang. In the Western District all the hams visited seem to be rebuilding. 3EX at Colac has not been on much lately; says condx there have been very bad. 3NZ, Terang, has almost finished an fb new rig with a tri-tet oscillator and 59 doubler. Be uses fone mainly, and has been getting some fb results. He says there will soon be a couple more hams in the town. 3DX, at Warrnambool, is QRL. Pictures every night, so has no time now for dx, but annoys the BCLS with 200 mx fone every Sunday. He is just building a new 3-stage job finishing up with a 211E. At Narracoorte, S.A., 5XR is off the air at present—a genuine case of QYL as in April "Amateur Radio" (but she won't let him down that way). This town will also have another ham in a few weeks. He has his AOPC, and is just waiting for his licence to turn up. Will probably sign 5XL, and is planning an fb xtal rig. We should hear some vy fb fone from him, as he has 3PY's condenser mike.

On July 11 the annual general meeting of Victorian division will be held, and it then rests with the full members of the division to see that they have a council that will further their Interests and keep up the improvements that have been made during the present year.

It is up to you to see that anyone that you think will be a good man for the job is nominated in correct form before June 27.

VK3 Phone Notes

Now, firstly, we have a very important reminder for the country phone chaps. All country stations on the 200 mx phone band who wish to continue transmissions from July 1 to September 30 must make application to the country allocations officer, Mr. G. F. Thompson, 3TH, before June 14, otherwise no allocation can be considered until October.

The competition committee met on Tuesday evening, May 15, when a fair amount of work on the subject of handicaps and other more minor details was completed. Up to the time of the last phone section meeting the following is a list of entries received:—Stations 3LU, BY, JB, TH, AM, KE, HF, JR, BH, CB, CR, RI, PA, GK, SB, LN, OV, JT, XL, DH, WF, FY, YF.

At the competition committee meeting a very lengthy discussion took place on the handicapping subject. It was finally decided to handicap on power only. This did not clean up the difficulty in one go, since we realised at one juncture during the discussions that unless all was carefully thought out and a limit placed on

the "points start" given for lower power we would perhaps get the Q.R.P. merchants on .001 watt, getting the grand total of 16 points for a start off.

The committee has decided to count 25 watts input power to the final amplifier stage of the transmitter as scratch, and one point start is given for every 1.5 watts under 25 watts. As an example: if a station is operating with a power input to the final stage of 14 watts, 7 points will be added to the score gained by this station under the "points awarded" formula, as published last month:—

	Points maximum.
Quality of modulation	50
Depth of modulation	30
Smoothness of carrier	20
Freedom from frequency modulation	10
Selection of programme	20
Stunt transmission (finalists only) ..	10
	140

The maximum addition of points for low power will be 10, meaning that there is no object in using less than 11.5 watts power input to final amplifier.

This system of handicapping was put in the form of a motion moved by 3TH and seconded by 3BY. The committee made a further decision "that the finalists in this competition shall be six in number, of whom at least two shall be country stations," and whilst on the subject of country stations those who are not at present active may send along their entries just the same, since permission may be obtained to continue transmissions as from July 1, provided, of course, as mentioned earlier, application is made before June 14.

Scottie, of 3KW, Geelong, did not send in news of the gangs' doings down there.

Although conditions for B.C. band DX are infinitely better now than around about Christmas time, we don't seem to hear as much "rag chewing" as we used to. The weather must be too cold for the troops now, particularly in a draughty shack at 2.00 a.m.

3KE was heard on Monday morning, 21st, calling a "2" at about 1.00 a.m. You seem to be always in the shack, Ern; if not on 1350 K.C., somewhere on 3500 K.C. How do you find the time, O.M.? Some time back a rather interesting experiment was put over from K.E. in the form of a S.W. rebroadcast. The counterpoise whilst being used in the ordinary way for transmission on 1350 K.C. was being fed to the short wave receiver as an aerial. Signals were being received on about 11,800 K.C., and at the same time transmitted on 1350 K.C., the same signals as far as the audio frequency component was concerned; quite simple to perform, but no doubt a complicated action was taking place in the wires of the counterpoise.

3AM, St. Kilda, was heard making strange and weird noises on Monday morning, May 21. Arthur was doing some grid modulation experiments, and said he wanted to watch the ant. amps (?) go up (or down) with a constant audio frequency note. How about a report on "the findings" in the form of an article in "Amateur Radio," O.M.?

A letter has been received from 3CY, and the gang will be pleased to hear that he is recovering from his illness, and is looking forward to the time when he will be back on the air again.

On behalf of the boys, Arthur, I'll say that we all hope that you make a very speedy and complete recovery, and will be glad to see and hear 3CY back again.

COUNTRY NOTES

WESTERN DISTRICT NOTES.

By 3HG-3OW.

3GC has left Camperdown for Bairnsdale, and no doubt has his gear on the air again from there. With his departure the QRM at Camperdown has been lessened considerably.

3NK is at present using the BCL 280 for his '45 tube, and getting some DX with T9 reports, with his TNT.

3GQ still working W's and VE's, though not on very much.

3LB, of Colac, has rebuilt his xtal rig. With 3KX he recently paid a visit to 3GQ. Though some doubts were expresesd as to whether his home assembled car would take them home, they evidently got there O.K., as no hams have been reported missing. 3KX relatively inactive, but still about the most consistent Western District ham. He is now using separate rigs on 7MC and 14MC, and is looking forward to licking 3GQ in the Centenary contest. A good struggle is anticipated between these two boys for that 852.

3NZ, Terang, keeps mainly to 80 metre fone and YL.

3HG, Coleraine, still as active as ever.

30W is off the air for a few days, owing to some of the gear being in a radio exhibition in Coleraine. A specially polished transmitter was built for this purpose, and worked surprisingly well.

Conditions on 7MC fairly quiet here at present; best DX being W, VE, CM, TI, OM.

VK3PG still putting out a great signal with QRP, and a few days ago was heard working a Yank. This is an fb performance, considering that only 4 watts is used.

By this time next month VK3OW hopes to have his gear moved into a more commodious shack right away from the house.

We were all very sorry to hear of VK3OR's illness, and hope that by now Murray is well on the way to recovery.

NORTHERN DISTRICT NOTES.

VK3WE.

As anticipated, the approach of winter has resulted in the household vacuum cleaner being put over many perks, with consequent increased activity on all bands. Despite cooler weather, however, conditions have been decidedly patchy, especially on the popular 7000 KC band, on which, up here, sigs. are most unstable. 3.500 KC, as prophesied last month, has increased in popularity, and my tip that anyone using this band would need several xtals in order to dodge the QRM has already proved correct. 14,000 KC seems to be livening up, and DX on this freq. should be good for the next couple of months. Several W's, Ks, and ZL's are at present on with phone. Heard one W7 say he was using 2000 watts. Very few VK2 or 3s heard here; guess we're in the skip. We (3LH and 3WE) tried to work 20 meter phone with 3PY a few weeks back without success, but reports since to hand from VK7 indicate that we were heard there. At present most of our activities are on 80 meters, but several intend going to 20 meters during the winter.

VIA seems well bitten with the 80 phone bug, and some excellent sigs. are heard here from 5MD, WJ, LR, IV, PK, KL and Co. 5QR still on QRP with 1½ watts or less. Tho. the strain is telling on the B. batts; he still raises the ZL's.

We have to welcome to the ranks of Northern Gang Jack Lambart, of Sea Lake, who passed the recent exam., and should have his call sign

by the time these notes appear. Aforesaid gang have cluttered up 80 band quite considerably, 3PY, 3CE, 3ZL, 3ZK, 3WE being vy active. 3CH, QRL on a trip to VIS, so the 500 cycle note hasn't been heard since. 3OR is home again, but haven't heard him since his return. 3KE heard occasionally, as also were 3GQ, 3NZ, 3HL and 3NN. The 2UO gang of 25 or more at Wagga still very active. 3RS and 2HU are still threatening to "make the next over the last." 2YX and 2BP still maintain quality and punch, while "Poley," of 7CK, is still growling about shortage of water for his hydro-genny. 3LH has been off, owing to his converter giving up the ghost, and during a recent week-end he paid a visit to old QRA, at Merbein, bringing back, of course, some wild and woolly yarns, which we refuse to credit. Herb ses he was disturbed in one of his early (?) ramblings by hearing a noise like a machine gun, and rushed into a certain shack to find 3CG, pounding brass—a bug wasn't in it. When he spotted Herb he almost forgot who he was working. Anyhow, a most enjoyable evening (oh, yeah) was spent, and after QSO with 7RC and 2BP they strolled out to supper, and to get reacquainted with the YL's. The gear at 3CG is really a credit to Johnnie, both for efficiency and neatness. Xmitter unit consits of a four-panel rack housing power supplies 46 S.E. oscillator, buffer and final using 46's in parallel, and with a very make-shift aerial, .6 amp. goes into the feeders with 11 watts on 80 meters. 3CG reports conditions in far north vy patchy and at times he can't hear 3AN, Redcliffs, though only 15 miles apart, yet hears other stations give Arch. good reports. While waiting for the converter to come back from VIM 3LH is rebuilding, and by the time these notes appear should be blistering the ether again —this time with a four stage link coupled rig., intermediate stage being thrown in as buffers or doublers by one big rotary switch. The best 80 meter sigs heard here for the month came from 3ZX, the Telefunken king, when not working W7's and K6's puts over duplex with 3GM; between them they use 34 tubes or more. 3AL is apparently going to be vy active this winter; was seen with a "DX hound" following him around Ballarat recently. 3PY, with more kick than an A class, still moans (like others we won't mention) about the local power supply. When his power drops the A.C. freq. changes, and introduces more noise than a row of ash-cans.

NORTH SUBURBAN RADIO CLUB.

VK3FY.

On Saturday, May 12, the above club conducted a house party at the home of our able secretary, Mr. Frank Maher, where a large number of club members and their friends assembled to spend a very enjoyable evening.

Another evening is to be spent at our president's Q.R.A., and an equally enjoyable evening is assured.

At our meeting held on Monday, May 14, Mr. E. Webb, one of our members, gave a very interesting talk on logging stations on the different short-wave bands. Mr. Webb has a large number of Australian and foreign stations jotted down in his log book. He was listened to attentively, and received a hearty vote of thanks at the conclusion of his talk.

On the same night the president of the club (Mr. R. Dowling) gave members some highly technical information concerning crystals. His talk was illustrated by blackboard diagrams, and proved very interesting and valuable. At some future date he intends to give a further talk on this subject.

The secretary has received numerous inquiries as to why the 200 metre transmitter has been off the air during the last month, and the query can be answered in one word—rebuilding. The whole rig, including the amplifier, is being rebuilt, and when completed should compare favourably with "A" class stations. Hi. Our thanks are extended to Mr. Dowling for his good work in connection with the rebuilding of the mitter. The transformers were made by one of our technicians—Bob Bull, and anyone wanting a first-class tranny should communicate with him, care of 3FY.

The membership of the club is steadily increasing, and anyone interested in radio is cordially invited to attend any of our meetings. The meetings in June will be held on the 11th and 25th inst.

The secretary will be pleased to forward further particulars concerning "Our Live Wire" club to those interested. His QRA is 102 McKean street, North Fitzroy, N.7.

—Bill Wonder, Publicity Officer.

NEWS FROM FEDERAL HEADQUARTERS

By G. B. Ragless, Federal P.O.

The members of the Federal executive are settling down again after clearing most of the items of the last convention, the results of which are most satisfactory.

The attention of some States is called to the matter of per capita payments who are behind.

Members are reminded to enter for the QRP contest, this being the second leg of the Fisk trophy competition between all States. Divisional councils are requested to provide prizes for their particular State to encourage the individual rivalry, and by so doing increase the chance of the State concerned securing the major prize. The rules governing the contest appeared in the last issue, and should be studied. After past contests one often hears that the QRP man had no chance, so here is a test made for the low uower man to show his mettle.

W.A.C. Certificates.

We would like to point out to all members that they must forward their six QSL cards to the Federal executive, who will, after satisfactory perusal, request 1ARU headquarters (ARRL) to forward the certificate direct. The Wireless Institute of Australia is a member society of the 1ARU, and the above is one of the privileges of being a member. The cards must clearly show that the station has had a contact with a station situated in every continent of the world, and will be returned after perusal.

Traffic Channels.

Whenever possible all divisions are requested to send information to Federal headquarters, via the institute traffic channels. This matter was urged at the convention, and we would like particularly to stress the necessity of each division appointing a reliable traffic manager. The radiograms are used to shorten the time of communication between Federal headquarters and the States, but we would like an official letter to be sent confirming the messages. The messages are always very short without any unnecessary words, so the following up of a letter is really always required.

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

A.R.A. FIELD DAY.

The Association of Radio Amateurs (N.S.W.) held their first field day on May 6. It was a great success, especially considering the weather in Newcastle and Sydney.

The proposed starting time was 8.30 a.m. from Sydney, but at 9.25 the last car got away. The secretary's car, 2GS, had installed an xmitter, two-stage xtal controlled on 80 meters. The last members of the party were picked up at Hornsby, and a more or less uneventful journey was continued for the sixty odd miles to Wyong. By 12.30 the Newcastle gang, including 2SO, 2KB, 2OF, had arrived. We looked everywhere for Stan, but he wasn't to be found.

About 50 hams sat down to lunch at the showground, including 2WG, 2TX, 2CK, 2XP, 2OC, 4GG, 2EZ, 2LZ, 2AE, 2AH, 2DR, 2GS, 2MR, 2OF, 2KB, 2HZ, 2SO, 2KA, 2VG, 2UP, 2UL, 2EL, 2PV, 2UX, 2JX, 2YS, 2QK, 2DA, 2NW, 2JH and 2AG. Also there was Mrs. 2DA, Mrs. 2QK, Mrs. Power and Mrs. Whytemead. The luncheon was a great success. 2UX, the president, was chairman. The toasts drunk were:—The King, the A.R.A. and Associated Clubs. 2EL replied for Zero Beat, 2WQ for Manly, and 2KB for Newcastle. The Wyong gang was the last toast, and 2TX and 2OC replied.

After lunch the various transmitters and receivers were aired, and 2OC worked a transmitter from his shack, using the same xtal as was used by 2WI. 2WI was set going at 3 p.m. in the hidden location on the banks of the Wyong River, and sent out a general call. The transmitter was a two-stage xtal rig, with Telefunken modulation, operated entirely from batteries on 3.5 mc. The batteries were kindly loaned by Diamond Widdis Battery Co., and they served their purpose excellently, standing up to a current draw of over 60 miles for four hours. In addition to this they were used in the mobile transmitter in Bob Power's car. The antenna was a half wave bent Hertz.

The first sign of the seekers was some 20 minutes later, when 2VS passed down the road about 100 yards away, but nothing further was seen or heard on the right side of the river until about four o'clock, when 2VS and 2GS were seen coming up the track. 2GS was first in, as it was his receiver. At 4.20 Manly Radio Club was second with 2WG's receiver, and 2UL, 2EL, 2VG and 2KA comprised the third party.

Everyone returned to the showground for tea, when the cup was presented to Arthur, 2GS. 4GG, of Chinchilla, was also welcomed. About 5.45 everyone set out for home for a night's rest—well earned.

A.R.A. FIRST ANNUAL DINNER.

The Dungowan Cafe at 8 p.m. on May 17 was the scene of the Association of Radio Amateurs' first annual dinner, and which by 10.30 had proved to be a great success.

Eighty-four hams arrived quite safely, but the safety factor on leaving wasn't quite so high. Representatives from the Radio Telegraphists' Institute, Zero Beat Radio Club, Waverley Radio Club, Lakemba Club, Manly Club and U.H.F. Club were present, and responded to a toast of Associated Clubs.

Among the hams present were 2WQ, 2UX, 2OC, 2TX, 2BP, 4GG, 2GS, 2BX, 2MW, 2WD, 2ZR, 2GG, 2HO, 2DA, 2NW, 2AG, 2EL, 2UP, 2AH, 2DR, 2BZ, 2HG, 2PG, 2MQ, 2MY, 2OH, 2HP, 2PX, 2IC, 2FQ, 2JX, 2XV, 2HZ, 2CW, 2YA, 2UL, and quite a few others.

Some of the sidelights included Eric 2BP's ability to make speeches, the Manly gang's ability to partake of a little light refreshment (who were the two hams fencing in Martin place with lilies?), 2YM's first aid to a lily and the whereabouts of 2OX, Jack Cambourne, 2PG, 2MQ, 2BP after the close. Anxious mothers were still ringing up the secretary at 10 a.m. next morning. The ability of the average ham to take a long draught—no three times three for them. The original intention was to hold these dinners yearly, but owing to an incessant demand it is proposed to hold them bi-weekly. Here's hoping.

ZONE 6.

Owing to severe *qrm* from d.c. generating gear, 80 meters is the only band used here at present. 2WH, of Forbes, is heard fairly consistently. The quality of fone is not all that could be desired. Sounds as though the mike needs some attention; seems to raise the z.l.'s ok. 2LM heard mostly on Friday night skeds. Fone is improving. Keep it up, Les. 2NM heard only occasionally with f.b. fone; plenty of punch and modulation, f.b. 2UJ, the qrp. merchant of Alectown, has the complete fone transmitter, receiver and monitor, using 4 tubes, 1 tube transmitter, 1 tube monitor. Uses the two tube receiver as speech amp. and modulator, heising system; has a 6-volt accumulator and home-made vibratory transformer for power supply. Some of the Dubbo gang heard on the B.C. band Sunday mornings. Fairly 'orrible fone.

ZONE 7.

VK2FI, Z.O.

During the past month there has been a fair amount of activity on both 40 and 80 metres. 2WA has just returned from Noumea, where he was listening for 2TA on sked without much luck. Reckons KA's and J's came in O.K. in spite of bad QRN. Since returning home Jack is busy rebuilding, and making way for a couple of 203A's. 2LB still parked on 200 metres, amusing the BCL's. Allan now has a commercial ticket, but is coming back to the ham bands again, YL's permitting. 2TA has been working plenty of Yanks, but is going to rebuild in an endeavour to get more output on 20 metres. Also has a midget portable transmitter under construction. 2FZ still chases the old DX. Had a go at the ARRL test in March, and landed 1404 points in 52 QSO's. Gordon is now WAC and WBE, and spends all his spare time after DX. 2KD has not been very active lately. 2WO, the transmitter of the Wagga Amateur Radio Club, has been on 80 metres with fone. They are now located at the Wagga Fire Station, and get out very well. 2XF has been using QRP until the new rig. is completed; but his fone is very fb here. 2TH is rebuilding as usual. He might be satisfied with that rig some days. Not much heard of old 2PN these days owing to pressure of business. 2GT away from home most of the time, and only gets home for an occasional weekend. 2FI is glued to 80 metres, using a car engine to drive the generator and a three-stage xtal rig. Has been using Telefunken fone with a small measure of success. Guess that's about all the dope for the month, but I'd like to register a kick against these felows who call CQ half the night without signing properly. Surely they don't expect anyone to answer a CQ which lasts up to 10 minutes or more.

Cheerio till next month.

ZONE 8.

VK2YI is now residing here, with headquarters at 2QD. Both work from the same shack, and a three-stage MOPA is pending. At present Harry's transmitter is in scraps but QD's TNT

is working overtime, and Harry does not believe in being Scotch with the dots (Hi).

VK3EG was surprised by a visit from the Albury gang, who went across on Anzac Day to see where 3EG's kick came from. A single 210 in the p.a. was found to be responsible.

Conditions on 80 m.c. have improved, and an occasional W heard on CW. On 20 mc. W6's heard up to R4.

NORTH SHORE ZONE.
ZO.—VK2DR.

2DR QRL? However, here's my effort for the month. As I've been building test gear during the month I haven't had a chance to get on the air much, but was astonished when young Dave Adams 2AE 'phoned me, and said he was receiving ZT's at R7 on 40. Hopped into it next night. ZL's? Plenty. ZT's? Nary a one. 2AE is VK's youngest ham, having been given a special licence by the R.I. at the age of 14 years. Dave is building an E.C. three-stage rig, using 46s. He is also grinding a xtal, and grinding his teeth because it won't perk. Keep at it, O.M. 80 mx. is collecting more and more hams, all intent on a good yarn. However, the remaining DX on 40 is keeping a lot on that band who would otherwise be rag chewing on 80. Con (2LZ), Bill (2HZ) and Alan (2AH) are having trouble with the BCL's. 2AG has been working his bit of DX on 40, with xtal sig., and still skeds his bro. in VK9. 2AH is getting some very nice cards in from the QSL bureau. Alan is thinking of rebuilding, including good quality 80 mx fone. 2BA sees his shack once every five weeks when his steamer is in port. Sa, have you seen 2DA's new stick? 66 ft., and right up on the top of a hill. Harry will sure get out fb now. 2DA says that VP1AM (Ocean Island) has received his new transmitter, which was built in Sydney, and will be on the air by the end of May. He shouldn't lack QSO's when he gets going! 2DU is vy QRL business. 2DY has been on 80 mx. a bit with xtal sig., showing slight traces of RAC. 2EL is getting some big tubes. 852's and 800's! Jack, of 2EZ, has returned from Jervis Bay, and has been visiting some of the local shacks. Nil from 2GJ this month. 2GW has been heard on 20 a bit. Jack, of 2HG, has been DXing again this month. 2HL has been rag chewing on 80. Horrie wants QSO's on 5 mx, with some North Shore hams. 2HO has been on 40 a bit, using 46s. Roy, of 2HY, has been down with 'flu, but O.K. now. Although he has worked lots of Europeans, 2HY worked his first W on 20 this month! 2JU is rebuilding. 2JY is at large agn with xtal RAC, and much enthusiasm, and is using Tri-tet. 2KA is rebuilding everything except receiver. 2ND will have departed for Nth VK4 by the time this is in print. Look out for him, as 4ND, and also look out for him as 4AY, a new B class station! 2ND has been getting amongst a good bit of DX. 2KX has given ham radio the bird, and is doing much "tickling the ivories." 2OE is rebuilding. 2PV has 210s in pp. with a sig., a bit on the chirpy side. Peter has worked his first PK.

2SZ is working ZLs with his 45s, and has new AC rx. 2VG has rebuilt into breadboard style, and finds it better than the upright layout. Rex. is keen on playing draughts over the air. Anyone interesed please get in touch with him. 2XC is still QRL Uni. Jim (2YC) has been holding minor hamfests at his shop at Miller's Point.

2ZG paid me a visit a week ago. Jim has been off the air for some time. How about throwing a comeback, O.M.? 2ZI has been on a bit with very solid sig. 2CT has been heard with RAC sig. 2YA is coming on again at last with Tri-tet and TBO4/10s in final, and Rex can sure chow the rag when he gets going.

2KM has obliged again with doings of the Manly district hams. Here they are:—2WQ's rig consists of 247 C.O., 247 FD, and 210 P.A. Heising fone, and half wave 40 mx zepp. QRA is 87, Darley road, Manly. 2WQ has some fb Interstate reports of his phone. Hasn't decided to do any brasspounding yet. 2MR. Call sign of Manly and District Radio Club. Fb xmitter installed, and also fb RX. Should be on the air soon with 40 mx fone. Harry, of 2DA, attended the Wyong field day in his little car, accompanied by his YF, 2NG is very QRL getting bugs out of his A.C. amp., and meanwhile playing tennis by day and chasing DX fone by night. 2NG is one of Manly's fb fone stations.

2UP is now QRL during day, making BCL sets, and hasn't much time for the high freqs. Gess Jim sure rattles that home-made bug at times. 2KM manages to get some DX QSO'ed when OW asleep. VE5, CT2, and W, QSA5, R5 are in the bag. Gess not so bad for QRP, and collection of junk. 2CE is a new ham over here, with chirpy DC QRI, and has a mania for QSYing. He tells me that xtal and QRO will shortly be installed. Well, cheerio, till next month. Tom 2KM.

Well, the first ARA hamfest takes place to-night, and promises to be a great turnout. So long, chaps. CU next month.

WAVERLEY RADIO CLUB.
ZO.—UK2OH.

Well, here we are again, gang, after a very long absence from club notes, and this time our publicity is in the hands of a new officer recently elected. In taking my bow as such I would first like to draw attention to the good work of my predecessor, Charlie Rowles, who was responsible for some very excellent contributions over a period of many years. I understand that in the near future Charles will be departing for "G." If so, the club have to wish him bon voyage and 73, and hope to hear him pounding brass to the tune of a kilowatt or so on arrival back home.

Our meeting to-night marked the election of officers for the ensuing half-year, and that is where yours truly came into the picture. The election resulted:—President, Mr. Gordon Wells; hon. secretary, Mr. F. Garland; and Mr. Harry Martin (VK2FW) is treasurer. The visitor to the meeting was Mr. M. Lusby (VK2WN), who has already signified his intention of becoming a member.

First of all, we would like to tender thanks to the Lakemba club, and also to congratulate them on their recent annual re-union, at which we happened to be guests.

Joe (2RQ) came up to the above meeting after a very long absence, to tell us about a new transmitter circuit he is going to employ on 40 mx. Consisting of a 57 used as a combined crystal and self-excited oscillator, the self-excited portion being tuned to the harmonics of the crystal frequency, it will drive an amplifier operated on either the xtal frequency or the associate harmonics, and it is claimed that the 57 will fully drive a 210 on any band under these conditions. Anyhow, hope it works o.k.

2FW is up on the broadcast band again. This time with serious modulation. Harry modulates a 210, with a 2A3, and says it works very satisfactorily. The quality is really all that could possibly be desired as the modulation runs up to about 95 per cent. on modulation peaks, and Harry says he tried about a dozen types of tubes as modulator before selecting the 2A3.

What's happened to 2XB. A little dicky bird informed me he was QYL, but I refuse to believe it.

Stan, of 2SG, is going M.O.P.A. with an 800

in the final. Think Stan's trying to outdo the clubs TCO4/10 as far as getting out is concerned; Q.R.A. is not more than 200 yards or so away.

2BT installed a 211 in the final, and went "crook" because he only got R9 from Bondi, hi!

2HP is now putting out excellent fone nightly on 80 mx. Harold is rebuilding his speech emplifier, and has installed a dynamic microphone, thus bringing the station right up to date.

Had about eight chaps up at my shack (2OH) on Saturday afternoon, including Mr. A. Slight (2ZA), from Richmond. The shack is not very big, but we managed to squeeze them all in somehow. Was having some trouble in the transmitter at the time, and eventually discovered a short circuit in the oscillator r.f. drive after the coupling condenser.

Visitors are always welcome at club meetings.

LAKEMBA RADIO CLUB'S FOURTH ANNUAL DINNER.

The Lakemba Radio Club's fourth annual dinner was a great success, and points to a great future for ham radio in this State.

About 60 members and visitors sat down to dinner. The first toast was to the King, and others followed in quick sequence. The R.I. was toasted, and Jack Carroll, 2OM, replied on his behalf. Associated Bodies was the next toast. Bob Power replied for the A.R.A., 2CN for Zero Beat, 2WQ for Manly, 2XU for Hurstville, 2JX for U.H.F. club, Mr. Wells for Waverley. The foundation members were then toasted, and an old-timer, Charlie Luckman, 2JT, replied. The Ducon cup and replica were presented to 2NJ by 2IC, the president. This cup is won in a transmitting contest run by the club every year. 2YC spoke on behalf of the B.E.R.U. and R.S.G.B.

The ham members of the club now number over 20, and with Bill Picknell as secretary the future of the club promises very well.

ZERO BEAT RADIO CLUB ANNUAL DANCE.

Another ham social event during May was the Z.B.R.C. annual dance. Everyone voted it a great success. A presentation was made to Harry Whytemeache and Mrs. Whytemeache on the former's birthday. Harry is one of the most enthusiastic BCL's in Australia, and a very popular man in ham radio in N.S.W., an ardent hiker and a Scotchman, and is generally accompanied by a little two-tuber. There were about one hundred present, including representatives from various clubs.

VK4 (QUEENSLAND DIVISION)

The monthly meeting of the Wireless Institute of Australia (Queensland division) was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, May 4, before a fair attendance of transmitting and student members.

Students' Representative.—Mr. H. Angel selected.

Queensland Bureau.—The address of the Queensland Bureau is Box 1524 V, G.P.O., Brisbane.

Student Classes.—These classes have been reorganised, and will commence on July 1. An increase in fees is to be charged, and the course will contain 26 lectures, delivered by a permanent lecturer. Further particulars can be obtained from the secretary, Box 1524 V, G.P.O., Brisbane.

Transmitters' Section.—Kindly note that this section meets at headquarters every second Thursday of each month, and good attendances are expected.

All correspondence for the institute should be addressed to the secretary, Box 1524V, G.P.O., Brisbane.

4WD is back again on the air, putting out a good hefty signal from his 46 in T.N.T.

4UU reports having landed his first VE4, which, by the way, says he has been after for two years. The old pair 210's must be doing their job o.k.

4HL, Harold ("Smiler") Lynch expects to be on the air shortly, and hopes to make a big noise with a 210 in Hartley.

4MC, A. D. ("Sandy") Macpherson, is at present on QRP, and will shortly be heard on his three-stage xtal rig, which will be a swell outfit when completed.

4WT has been experimenting with the Collins low pass matched impedance Antenna, results so far being fb.

4TS has been holidaying down the south coast.

4GA (Gordon Shearer), kid whacker from the Mt. Nebo State school, met a few of the boys when in VIB, and some good yarns were exchanged. Gordon puts out a good signal from his Qrp, Hartley, using a B406.

4US has now a much cleaner signal since attending to his filter.

4YJ heard testing fone with 4WT, and the quality was excellent. Sounds like a condenser mike being used at your end, Vince. However, it was the best fone heard from you for a long time.

4GG, of Chinchilla, is at present in VIS.

4JM, of Nambour, has been making alterations to his feeders, having reduced the spacing to four inches. Says results fb.

4JB is now using a three-stage xtal rig, 47 Ox, 46 Dub, and 210 in final, and has now a fb T9 signal. Ock still requires Africa for his WAC, so maybe this new rig will bring you some luck.

4GU and 4FB recently paid a visit to the Ipswich gang.

Do not forget the Fisk QRP contest to be held midnight June 22 to midnight June 30.

73RY.

VK5 (SOUTH AUST.)

Conditions in VK5 up to 20/5/34 have been fairly good. At times it looks as if we might be returning to the old 1928-29 days of DX unlimited. Quite a few of the elusive DX stations have been heard, both during the daylight hours, and at night on 40. The 20 m. band has been excellent during the afternoons, although there seems to be at least 5 Ws on the band to each DX station. Europeans are also being heard on this band in the very early mornings.

The racket on 80 has dropped, and rag chews on phone have come into their own again. While some of the phones are a disgrace to the band, the majority are f.b., being a real pleasure to listen to. ZL phones have also been heard at quite good strength on this band, too.

COUNTRY NOTES.

Eric Trebilcock mentions that he is receiving Europe better at 0730 than at any other time during the day.

5FG, Bern. Rogers, of Balaklava, writes:—"I am using a three-stage c.c. rig, with 47 c.o., 46 f.d., and 210 p.a. feeding a Zepp aerial. The Rx is a two-tube A.C. job, using a 35 det. and

59 aud. Since commencing operations on March 19 last six countries have been worked.

5QR was down in the city from PYAP during the school holidays. Reg uses a two-stage portable 80 m. rig, with the xmtr and Rx in one case. The xmtr uses a B406 osc. and B409 p.a., with a B409 modulator. Input on phone is 1.71 watts, and about 4 watts on c.w. from 300 v. of B batts. All VK and ZL have been worked on phone on this rig. Recently Reg was QSO with WIGF on c.w. The aerial is nothing in particular, being matched to the xmtr by means of the universal aerial coupler described in QST recently. 5AL has gone bush school teaching. He has taken the old 5QR 80 m. portable along with him. The Rx and xmtr is a compact little job in a case 12 in. by 9 in. by 4 in., and uses a 415 osc. with 120 volts of B batts. Telefunken modulation and a full wave Hertz aerial are used. 5AL and 5QR hope to keep skeds with each other, as they are only about 50 miles apart.

CITY NOTES.

5RT tried out the universal aerial coupling with f.b. results. A new single sig. super is being built. The majority of the chaps have seen very little of Bob since his recent marriage. Hope to see you along at the meetings oftener, o.m. 5WP's new single sig. is all but finished. It sure looks an f.b. job, with its polished copper chassis, double copper shielding, and air-tuned intermediates. The next thing is to get it to work, but this should not be hard, as Bill has spent a lot of time and trouble on it. 5RF was busy for a time blowing filter condensers, but has now stemmed the rush with a brand new 1500 v. working bank. A matched impedance aerial was put up the other week, and seems to work better than the Zepp. First QSO was with VK6 in the middle of the day, and was reported R6.

5RP, who has been off the short waves for some months, hopes to make a welcome return soon. Bob's 200 m. transmissions are f.b., and are getting out well. 5ML and 5MD are two other 200 m. stations whose transmissions are appreciated by the BCL's. 5WR still works DX—VE, W, VP4, etc.—with a T9 note. 5LG recently put in a 50 watt tube as p.a. It is a special high impedance tube, and draws only about 25 mills. at 1000 v.

5RO spends a bit of time grinding xtals, but we don't know whether they always oscillate. Intends to build up a three-stage xtal rig., using 47-47-E406. 5KL recently built his 80 m. rig. into a rack and panel job. The next job will be a 20m. perk, using a 245 in a Hartley. 5NR has been working W, VE, X, etc. Up to date 16 countries have been worked. The phone transmissions from this station are being well reported. 5MW has a nice four-stage xtal rig. going with an E406 as p.a. Grid modulation is used for phone, with an input of 12 watts.

5SU is QRL with air force work, but in his spare time is building up an f.b. freq. meter. 5MD, 5LR, 5PK, 5WJ, 5IV and 5FM are getting a great kick out of their six-way 80 m. phone QSO's. All these stations have f.b. transmissions. Some idea of their enthusiasm can be gained by the fact that 5MD and 5WJ were heard working at 0230 the other Sunday morning. 5MD was heard again on 200 m. the same morning long before a lot of people in the city had even thought of Sunday morning breakfast. Keep up the good work, Doc., o.m.

5WB has been on the sick list, but is hoping to get on 80 m. soon. An all-wave super has just been completed, using 58 r.f., 2A7 det., 3 stages of air-tuned intermediates, using 58s, 56 det., 56 a.v.c., 56 first audio, p.p. 56s second audio, and p.p. 2A3's output. Xmtr uses p.p. 210s in the p.a., coupled to a matched impedance aerial, with transposed leads.

5GO was off the air for many weeks, because of neuritis in his right hand.

5RX has a 3-stage xtal rig going, with separate power supplies. Has no trouble in working DX.

VK6 (WEST AUST.)

MEETINGS.

W.I.A., W.A. DIVISION.

At the shack meeting held on May 3 the attendance was only moderate, and members paired off to discuss doings on 80MX fone and compare results. Skeds were arranged, and much dope changed hands concerning the merits and demerits of various modulation schemes. Two notable absentees were BB and BN.

GENERAL MEETING.
May 17, 1934.

The above meeting attracted a good muster of hams and associates.

The president, 6AG, presided, and those present included LJ, LK, BB, RL, KR, FT, MN, SA, KO, KB, GM, PK, JK and CP.

Much discussion was caused by a letter received from the managing editor of "Amateur Radio." After the sixth division editor 6CP had reported on the upward trend of magazine sales, stating that 100 per cent. of the active amateurs were taking the "Mag.," a motion was carried instructing the secretary to write the editor, informing him of the position, stressing the point that all active hams were subscribing and others were gradually being brought in.

Eastern Staters can have no conception of the trials that WA hams have had these last few years, due to depression. We have seen our own Mag. and Bulletin go out of existence for lack of funds, but we are now doing our best to keep the official organ going.—Ed. 6CP.

To continue with the meeting! Nominations for the new council were received, and council will be elected at a future date.

The business of the meeting having concluded, Aerial Expert MN spoke on antennaes generally for a short period.

The brightest feature of the evening was a talk by Dr. Nimmo, of the University, on the Thyratron tube. The doctor, by means of sketches and full detailed descriptions, conveyed to members the possibilities of this wonder tube. A most attentive hearing was given to the talk, and wisely so, as Dr. Nimmo is one of the very few lecturers who can talk on any scientific subject, and convey his thoughts to the most dense of hearers, without using "wheelbarrow" words, which only confuse the layman.

At the conclusion of the talk a hearty vote of thanks to the doctor was carried in the nsual manner.

Members gradually dispersed, and are eagerly looking forward to another lecture by this wonderful little friend of the "Amateur Radio" gang.

C. R. Cooke, Ed. 6CP.

GENERAL NOTES.

During the past few weeks the activities of the VK6 gang have been very gratifying. Both on 40 MX and 80 MX things have been lively, and, although no outstanding DX has been reported, some very f.b. contacts have been made with VK5 and VK3 on Telephony on both bands. Active interest has been taken in the 80 MX fone, and quite a few of the hoys, young and old, can be heard there.

I remember last 80 mx season only hearing about three fone stations on the band. Now there are at least a dozen, the chief of whom being 6KR, KO, KB, RT, RW, CX, SA, MN, WM, GM, RA and CP, all with fair average stuff.

6SR comes on occasionally, but is not very consistent at all.

Three-way contacts and mixed 40 and 80 contacts are popular, and it is nothing new to hear one ham on fone on 40 calling another chap on 80.

6RA has blossomed out with some f.b. fone on both bands, and many 40 MX contacts have been made with VKs2, 3s, and 5s.

RW, the go-ahead country lad, has at last got some decent fone, and anchored his frequency. Heard working VK3 for a qsa 5 R6 report on 80.

6SA doing a bit of CW with ZLs, and by the sound of his sig. the shack must be in order again.

Old DA woke up the other night with a bump on 80, and put out a good hefty xtal sig.

KB at last on xtal on 40, and not so bad either, but says there is no DX to get.

CP still looking for a decent mike, and keeping sked on 80 with 5KL on Sunday evenings 1200 GMT.

GM, after getting everything ready for some high-class fone, dropped his Ribbon Mike with serious results, but has been since heard on 40 MX.

MN trying Electron coupled, and has just at present got things O.K. till something slips.

KO sticks to MOPA, and his fone now f.b.

Likewise KR, after trying to get a first-class modulator going with small funds, came to earth with Heising and good reports.

RT puts fone all the way from Greenough from a Lizzie Coil supply, which is rectified and filtered.

Taking things all round the quality of the fone is O.K., and as QRP is the order of the day in VK6 there should be a good time coming during the winter.

On CW can be heard 6FO, HD, FM, DA, DH, as well as all the fone experts who have not entirely deserted the key. Seventy-five per cent. of the gang are on xtal, and the others hope to be soon.

6RL or 6LJ not heard much lately, but both have other very pressing business to attend to.

Say, gang! I want a technical article or a description of your station every month from this on, and everyone must oblige, so get to it.

VK7.—TASMANIAN DIVISION.

By 7NC.

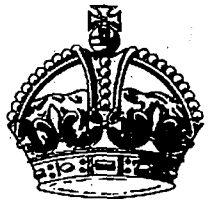
The usual monthly meeting of the division was held in the club rooms on May 1 before a fair attendance. Mr. Allan (7PA) delivered a very interesting lecture on transformers, and their construction, and no doubt many of the listeners afterwards had visions of building transformers with umpteen thousand volts output, and with an efficiency of not less than 100 per cent.—perhaps. During the evening the final arrangements regarding the annual meeting, to be held next month (June), were discussed, and it was agreed that a field day would help materially to provide an interesting and enjoyable week-end, especially for the visitors, as they have few opportunities of taking part in these outings. With the large increase in members of the institute during the past 12 months it is anticipated that the coming annual gathering will be the biggest yet held. So roll up, and be sure you are amongst the gang during this one and only event of the year that brings you in touch with your country members.

At some of the previous meetings of the institute warm discussions ensued regarding key clicks, key thumps, blanketing, etc., and after each member had given his views (and nearly all of them differing) it was decided that a modern receiver should be built so that a check could be made against those stations who were supposed to be causing interference. Shortly before the receiver was put into operation Mr. Buring (7RB) suggested that the system known as blocked-grid keying should be tried. This system was tried at 7NC, and resulted in immediate success. Since then other amateurs in VIH have installed the system with equal results.

Since the last notes our old friend 7CH has been transferred to VK3, and at a farewell gathering in the club rooms many of the members were present, and wished him the best of luck.

Many of the VK7's can now be heard on 80 mx., where some fine QSO's with the mainland and New Zealand are being made. The 20 mx. band is O.K. for W QSO's during the afternoons, but most of the gang have their activities on this band confined to week-ends.

R.A.A.F. Wireless Reserve Notes



VMC

Total No. of Messages **497**

Average per Station **29.25**

VMB2

Total No. of Messages **114**

Average per Station **38**

2B5

Total No. of Messages **66**

Federal Notes by the C.O.

These notes were compiled on May 16, the day of my departure for New Zealand, and consequently many items of interest will have to be left over till next issue. However, the appointment of VK3DM as the Director of Communications and Federal Guard station working under the call of 1A2 is recent. The amount of work, office and otherwise, at headquarters necessitates someone to carry on the training and work over the air. 1A2 will conduct all Federal watches with the District Commanders, and act as a traffic feeding station.

For the third time VMC district is being called upon to carry out work in conjunction with the R.A.A.F. at Deniliquin towards the end of the month. This is the course chosen for the cadets' cross-country flight prior to being passed out. A channel of communication must be established between there and Point Cook for the period of the flights, and this is left to the reserve to provide. A full story of this will be found in the VMC notes.

October 29 to November 3 has been chosen as the period for the amateur convention combined with the reserve convention in Melbourne during the Centenary celebrations. Many members have expressed their intentions of coming down for the fun, and it cannot be impressed too strongly that those who do intend migrating here should let their District Commanders know early, so as accommodation can be arranged where possible. The R.A.A.F. has signified its intentions of co-operating with the reserve during the convention, and indications are that all will have very good time.

SECOND DISTRICT.
(2ZI.—VK2BP.)

Training commenced with three sections at the beginning of April, and now that VMB is in action it should not be long before a contest will be staged for competition between the various sections. It is noticeable that some members are not keeping watches, but it is hoped that ere long they will find the necessary time for activity, especially when they know that by missing watches they are keeping the other members back. It has been pointed out previously that proficiency in reserve operating can only be arrived at after extensive practical training, and this training is more or less confined to traffic handling. I have stressed this point in district broadcasts, and, although the traffic returns for the first monthly period are promising, they are, to say the least, disappointing.

New member are slowly appearing, and by the time this appears in print it is hoped to have a fourth section in training.

The most consistent VMB stations are 2B2 and 2B5. These chaps have never missed a watch. Others who have proved enthusiastic are 2A1, 2A6, 2CI and 2C3, and I have no hesitation in saying that if all VMB members were as consistent as those mentioned New South Wales would be a bumper district.

The present watches are as follows:—

Sundays	commencing	0900—District watch.
Mondays	,,	2000—VMB1
Tuesdays	,,	2000—VMB2
Wednesdays	,,	2000—VMB3

It is hoped that next month we will be able to give a more glowing report on VMB activities.

Traffic—

VMB1.—None reported.

VMB2.—2B2, 35; 2B5, 66; 2B6, 13; total, 114.

VMB3.—2CI, 8; 2C3, 10; total, 18.

D/C.—2Z1, 42; total, 42.

VMB total, 174.

THIRD DISTRICT NOTES.
(VK3UK—3ZI.)

Events are tumbling over themselves thick and fast this month—new members enrolling, a portable station at Deniliquin, the forthcoming relay contest, and possible amalgamation of VMC and VMG.

Each year in June VMC holds a relay contest lasting a week, in order to determine the crack traffic handler for the year. A trophy, consisting of a silver eagle, is presented to the winner at the reserve convention, and is held for the year by that station. 3D4 is the present holder, but as Murray is very ill it is more than likely he will be unable to defend his title. It is very unfortunate, and all stations are hoping that he may even yet be able to compete, because he would put up the stiffest opposition to anyone wresting the title from him. This year the contest is more open than ever before, as there is such an even standard of ability and efficiency throughout VMC. Quite a number of stations here can send and take 30 W.P.M. and over, but in a contest such as this one's speed is limited in each contact by the speed of the slower man, thus the winner needs to be a man of all-round operating ability, with a thorough knowledge of procedure first, and a high speed man second.

3C2 came down to VIM early this month to meet 3D4 after his trip to Java. They dashed straight back to Kerang almost immediately, so we had very little chance to see much of them. Our country members always seem to be in a rush when they come to Melbourne. 3B4 and VK3GJ, who used to be 3A2, "blew in" for a short time, and 3F2, who is moving to Bairnsdale, has had a short time here on each occasion when he has passed through. 3E5 was down in the city on business for a few days about the middle of the month, but was too busy with the object of his visit to have a chance of more than seeing the city boys. 3C5 has made a welcome reappearance after an enforced absence of some months. If his traffic handling on the last two Sundays in this month is any criterion he has lost none of his operating ability, and his fist is as good as ever, despite his long period off the air.

Every year about this time the cross-country flights, which are part of the CAF training, take place. Again this time they were to Deniliquin, and at very short notice 3C2, 3B1, 3B4 and 3B5 made the necessary arrangements and went across, erecting a station on the landing ground. They kept 100 per cent. communication throughout the exercises, with VJS sending weather reports and arrival and departure messages of the machines as well as arranging by radio all the multitudinous details coincident with a flight such as this. Altogether it was a perfect example of the co-operation 100 per cent. efficient reserve members can give the RAAF at a moment's notice. 3C2, 3B1, 3B4 and 3B5 are to be congratulated on their great work.

It is possible that VMG will join forces with VMC as one of our sections, and we extend a hearty welcome to their members. So as to assist them in getting to know all VMC stations we extend to them a very cordial invitation to enter for our relay contest, and wish them the very best of luck.

We note from other district notes this month that stations are already making arrangements to come over for the Centenary. Great stuff, indeed! We will guarantee you not only a hearty welcome, but will do everything possible to ensure you a rattling good time. Remember, the more the merrier!

FOURTH SECTION.
(4ZI.)

Sections and call signs have now been allotted in VMD, comprising two sections scattered over metropolitan and country districts. Most of the members seem very keen on watch keeping, which indicated good support for future work. Watches are at present being conducted on 4155 KCS Sundays, 1900 hours. VMD2 intend providing at least one mid-week watch for the handling of additional traffic, which will be created.

4A1 and 4B1 are the first appointed section commanders, and 4B1 pays a weekly personal visit to the D/C shack, and is very concerned with the work of VMD2, and expects his section to put up the highest VMD totals.

Traffic totals.—4B1, 3; 4Z1, 2.

FIFTH DISTRICT NOTES.
By 5ZI (VK5SU).

Broadcasts are still being given each Sunday at 9 a.m., 6555 being used for the broadcast and 7317 for section working. 5MY and 5RH should receive their training manuals this week, and this should result in a strong first section.

Schedules with VMF have been very difficult to keep, signals not being audible at times.

We are losing a good operator in 5ML, who has gone to VMC to train for the navy just as his enrolment has been completed.

5A2 has been on low power with his portable, but expects to have his c.c. job going when he settles down again.

5ZI and 5A1 will be visiting VMC in October, and since 6Z2 will also be going there should be no difficulty in getting a representative from each district.

Several non-members have made inquires about the reserve, and these will be given a copy of the circular compiled by 1A1 as soon as it is received.

5B5 is not active at present, since he has to work on Sunday morning.

It is intended to inaugurate a night watch within the next week or so. Tentative arrangements are for 2200 hours Sunday evenings on 3.5 m.c.

VMF stations have been heard on 6555 on Sunday mornings, also VMC stations on 3.5 m.c. same time.

SIXTH DISTRICT NOTES.
6ZI.

A move has been made to the lower frequencies this month. 6A2 got into difficulties with his transmitting gear, with the result that he is now building an E.C. oscillator, and is keeping his c.c. transmitter for 7 mc. Two new call signs have been allotted in 6A3 and 6A4, so VMF is gradually gathering strength. The roll calls have not as to yet been very well attended, due to various reasons. 6A1 is working every day and night getting the new broadcasting station ready, but he will be back on watches as soon as that is finished. Good operators are scarce here, and 6A1 cannot be let out of sight! 6Z2 is contemplating going to VMC for the Centenary, so look out, you VMC gang.

SEVENTH DISTRICT NOTES.
(7ZI.—VK7RC.)

VMG seems to have a "hoodoo" on it lately! The main item of business is arranging transfers and accepting resignations!

7B1 has forwarded his resignation, owing to lack of interest shown by the Hobart transmitters, and also to the departure of VK7CH from Hobart. 7B1 could not receive the B/Cs from 7Z1, and VK7CH received them for him and passed them on later, so that 7B1 has no other members to receive for him.

This leaves VMG with three members, which is not many for a district! It has been suggested that VMG members form a section of VMC, and thus carry on with the reserve work. The remaining members are all proficient in procedure, and it would be a pity if they were to drop out owing to lack of members, so that it appears likely that we will join up with VMC. 7ZI remarked in last month's notes that VMC would have all the good members from VMG shortly, but did not expect it to come about in this manner! Nevertheless, VMC, you will have to put up with our presence shortly. I have a silver cup here, which I may donate to VMC for a competition as soon as we get going with you!

A few items of interest in regards to the quarters work, carried out in VMG, may be of interest to the other districts.

The highest number of members we had at any period was five, and not one single B/C or watch was missed by any of these members. A B/C was given to all members by 7Z1, each week, and every Sunday morning devoted to traffic handling.

A total number of messages handled by these five amounts to 940, and the number of words in these messages is 17,117.

At the present time these members are carrying on, awaiting word for the time when we are to commence operations with VMC.

Traffic totals for May:—7ZI, 26; 7A1, 20; 7A2, 12.

Correspondence
"QRZ" IS STILL WRITING.

Well, who gets up in the mornings this fine wx to see if the DX really isn't there? Condx seem pretty punk round this part of the globe. North Americans come in well at times, with the Canadians more active than usual.

2BP has QRO, which gives him rough note. Pity the sigs don't go straight off the mountains instead of landing here RMax. 2UY and 2WZ, another couple from N.S.W., with rough RAC.

2FK is another one of those chaps who seem to use 26 dcc for their tank coils. When keying the vibration makes the sig go from DC to RAC.

Yes, 3EG, I quite believe you when you say the ole 210 is pulling 130 mills, with amps in the sky. Signal has a modulated RAC effect, which makes it audible a fair distance either side of the carrier.

I think 2MY takes the biscuit this month with his RAC note. And 3RW has not yet become modernised. Heard with that very rough note as of yore.

Yes, 4UZ, I guess you were quite right when you said that your fone would be better on 80.

4KX and 4FW also rough RAC.

2NH has a different sig now. It's chirpy RAC.

Fone on 40 at night in Queensland seems popular now. Heard 4WT and 4VJ one night.

I don't suppose there is much DX about now for fone stations to spoil on 40. Still, it isn't much of a band for fone, anyway. 2EH covered a large-sized slice of the band with his chirps the other night.

Heard 2ML tell a W7 that he was using a 211E with some watts input. Sounded like it here, too. Would have been fb signal if it was PDC.

3MX has very nice T9 note, with clix well suppressed. And, talking of suppressed clix, reminds me of 5MY's funny sort of signal with no clix.

4RM was rough and broad when heard calling 4GK one night.

5JO has one of best T9 sigs in VK5, but evidently his receiver isn't so hot, as he didn't hear that W7 call him.

Say, 5XU, why don't you live up to the reputation of your VK2 namesake instead of using that RAC note.

2XU has real good sig on 40 and 20, and I guess that all the DX stations have his frequency marked on their dials.

4DC heard with very chirpy DC. This wobbly coil business is rather prevalent these days, with 2SQ the latest addition.

2JY almost like that power leak I write about every month. 2DA has big hefty ripple in that NDC note.

Apologies, 5MV, that was FB T8 signal I heard you with recently. Come on, you Interstaters, don't let the VK3 chaps do all the articles in YOUR magazine. Did you read the MAY editorial?

"PORTABLES."

By 2NS and 2YB.

Some time ago Trevor Evans (VK2NS) and Bill Lewis (VK2YB), who are both enthusiastic motor cyclists, conceived the idea of using portable radio in conjunction with the Australian tourist trophy motor cycle races, which are an annual event in the Bathurst district of VK2. When the idea was put to the Auto-Cycle Union it was received with much acclamation, hence many "skeds" and much discussion between 2NS and 2YB.

The course on which the races are run is a road circuit, approximately seven miles around, which is made available by the local shire council, and it was decided to place one portable about half-way round the course for the purpose of signalling the numbers of the riders as they passed on each lap. These numbers were passed on to the Public Address System announcer, thus keeping the spectators in touch with the progress of the races when there would otherwise be a dull period while the riders were out of sight. Although, fortunately, it was not necessary, it was also an important link with the race officials to call assistance in case of accidents.

The necessary gear was supplied by 2NS (he being located at the scene of operations), and consisted of two transmitters and two receivers. For the end where the P.A. System was installed and where A.C. lines had been made available, the transmitter was a Hartley, with 350 volts of R.A.C. to a 205d valve, and the RX was an E.C. job, using a 57 and a 2A5. This was operated by 2NS, as his machine was entered in the handicap race, and he naturally wished to be handy to arrange things for his rider. The other end, which was operated by 2YB, was battery operated (2200 volt mains ran close handy, but who wanted them? Hi.) This transmitter was also a Hartley, using a 201A, supplied with 180 volts from four blocks of "B" batts. The receiver was a three-tube (detector and two audio), with only 45 volts on each tube. Both sky-wires were of the A.O.C. type, each being supported at the free end by a 20-foot piece of hardwood tied to fences. Hi. Small aerials (about 15 ft. long and 3 ft. high) were used on the receivers, and since the distance airline was only about two miles and the PDC (Hi) sigs were R9 very FB break-in was used throughout.

To ensure accuracy, break-in was almost essential, as it only took the riders about three minutes to cover the distance between the stations, consequently stragglers would still be passing 2NS while the leader was passing 2YB and with the resultant QRM queries were sometimes necessary. 2NS swears that it is much easier to copy South Africans than to copy our R9 sig through the QRM from a bunch of well-tuned TT Replica "Rudges" and International "Nortons," doing some 80 m.p.h., with straight-out exhausts, Hi.

Early in the day 2VJ arrived to view the races, and was promptly appointed second op. to 2YB, and did very good work, checking riders' numbers and keeping small boys from the line of vision, also rounded up a pup, which wanted to investigate the R.F. in the transmitter, Hi. Another "ham" to put in an appearance was 20D, who paid 2NS a brief visit.

A violent and somewhat monotonous form of QRM was prevalent from gentlemen who would rush to 2NS when he was endeavouring to copy a batch of numbers from 2YB, and want to know "who won the Doncaster?" or could he listen to the description of same. Alas, after Trevor's somewhat colorful reply they would wander sadly away, never to return.

The two stations were in operation almost continuously from 9 a.m. to 5.30 p.m., and statistics show that over 800 numbers would pass 2YB in that time. In one race there were 46 entries, and the "ops" were certainly kept "opping" when these came through in bunches.

Many other urgent messages were received by 2NS from Bill, of 2VY, such as "When do we drink?" "Hold everything and send us some eats," etc. 2YB and 2VJ "put one over" on 2NS, when a kindly old lady, in whose "umpteen" acre paddock their gear was located, introduced a thermos flask of tea, together with the necessary biscuits, Hi.

At the conclusion of a very FB day it was unanimously agreed that "Ham" radio had added greatly to the interest in the races for the spectators as well as giving the operators some

experience of operating under open-air conditions.

Should any reader have heard either of the stations, both operators would greatly appreciate reports, even though the reports are somewhat belated. 3.5 m.c. was the band used, and many Interstate and local hams were heard during the day at strength varying from R6 to R8 on the small aerials. Owing to being very QRL no time was available for QSO's. CW was used in preference to 'phone, because of the aforementioned QRM.

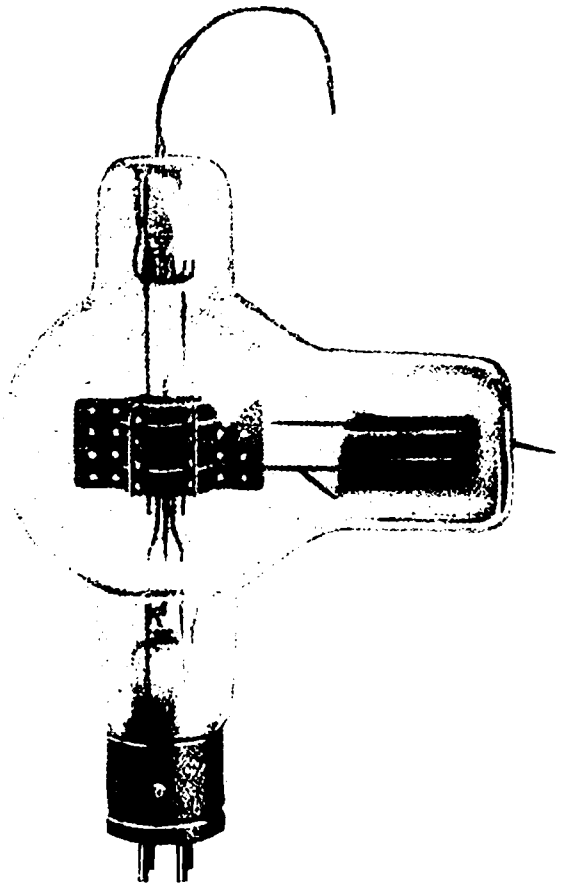
MELBOURNE CENTENARY DX CONTEST.

Here are the detailed characteristics of the Radiotron 852 and 800, which have been kindly donated by A.W.A. Ltd. for first and third prizes in the open section:—

Radiotron UX-852.

General.

Main use—oscillator and R.F. power amplifier.
Number of electrodes—3.
Filament voltage—10 volts.
Current—3.25 amperes.



Type—Thoriated Tungsten.
Average characteristic values calculated at:—
Eb = 2000, Ec = —108, Ef = 10 volts D.C.
Plate current—0.050 amperes.
Amplification factor—12.
Plate resistance—10,000 ohms.
Mutual conductance—1200 micromhos.
Approximate direct interelectrode:—
Capacities—
Plate to grid—3 mmf.
Grid to filament—2 mmf.
Plate to filament—1 mmf.
Type of cooling—air.

R-F Power Amplifier.—Class B.

Maximum operating plate voltage—3000 volts.
Maximum unmodulated D.C. plate current—0.085 amperes.
Maximum plate dissipation—100 watts.
Maximum R.F. grid current—10 amperes.
Typical operation:—
Eb = 2000, Ec = —150, Ef = 10 volts D.C.
Unmodulated D.C. plate current—0.060 amperes.
Peak output—120 watts.
Carrier output (modulation factor 1.0)—30 watts.

Oscillator and R.F. Power Amplifier.—Class C.

Maximum operating plate voltage:—
Modulated D.C.—2000 volts.
Unmodulated D.C.—3000 volts.
A-C (R.M.S.)—3000 volts.
Maximum D.C. plate current—0.100 amperes.
Maximum D.C. grid current—0.040 amperes.
Maximum plate dissipation—100 watts.
Maximum R.F. grid current—10 amperes.
Typical operation:—
Eb = 2000, Ec = —250 approx., Ef = 10.
Output—100 watts.
Socket type—UR-542 plus clips.

RCA Radiotron 800.

Filament voltage (A.C.)—7.5 volts.
Filament current—3.25 amps.
Amplification factor—15.
Grid plate capacitance—2.5 mmfd.

Grid filament capacitance—2.75 mmfd.
Plate filament capacitance—1.0 mmfd.

Class B. Modulator.

D.C. plate voltage—1250 (max.) volts.
D.C. plate input—85 (max.) watts.

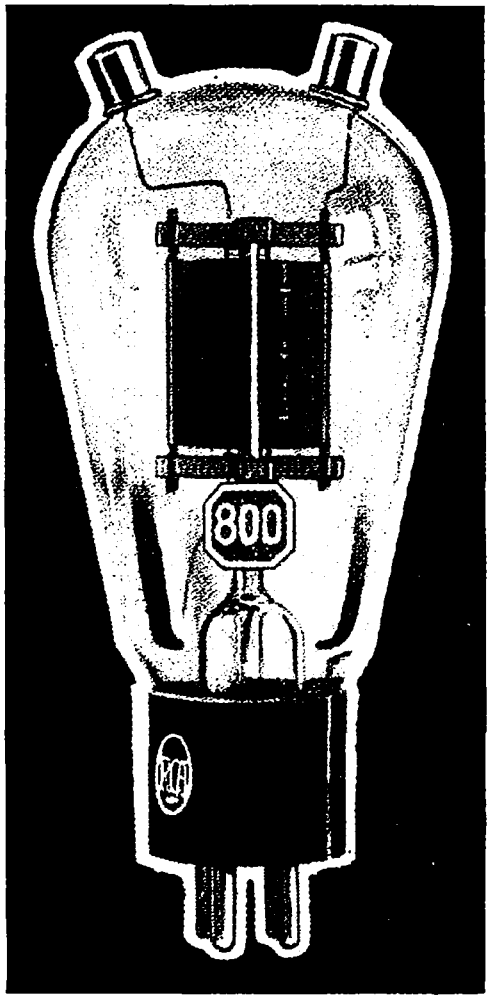


Plate dissipation—35 (max.) watts.
Typical operation (2 valves).
Filament voltage (A.C.), 7.5 volts.
Plate voltage (D.C.), 750; 1000, 1250 volts.
Grid voltage (D.C.), —40; —55, —70 (approx.) volts.
Static plate current (per valve), 13; 14, 15 milliamp.
Peak grid voltage, plus 121; plus 93, plus 77 volts.
Peak grid swing, 156; 143, 142 volts.
Average grid current (per valve at full output), 17; 10, 9 (approx.) milliamp.
Peak grid current, 77; 47, 37 milliamp.
Peak plate current, 333; 253, 200 milliamp.
Average plate current (per valve) at full output, 107; 82, 65 milliamp.
D.C. plate input (per valve), 80; 80, 80 watts.
Load resistance (plate to plate), 6400; 12,500, 21,000 ohms.
Nominal power output (2 valves), 90; 100, 106 watts.

Oscillator and R.F. Power Amplifier. Class C.

Plate voltage D.C.—1250 (max.) volts.
Plate current D.C.—80 (max.) milliamp.
Plate dissipation—35 (max.) watts.
R.F. grid current—5.0 (max.) amperes.
D.C. grid current—25 (max.) milliamp.
Typical operation:—
Filament voltage (A.C.)—7.5 volts.
Plate voltage (D.C.), 750; 1000, 1250 volts.
Grid voltage (D.C.), —100; —135, —175 volts.
Plate current (D.C.), 70; 70, 70 milliamp.
Grid current (D.C.), 15; 15, 15 milliamp.
Driving power (R.F.), 2.0; 3.0, 4.0 watts.
Nominal power output, 35; 50, 65 watts.

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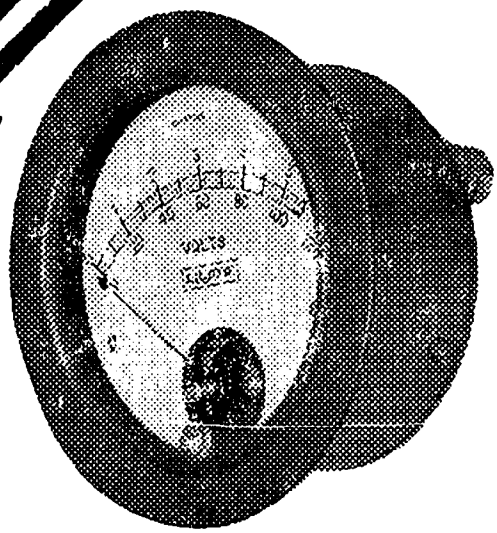

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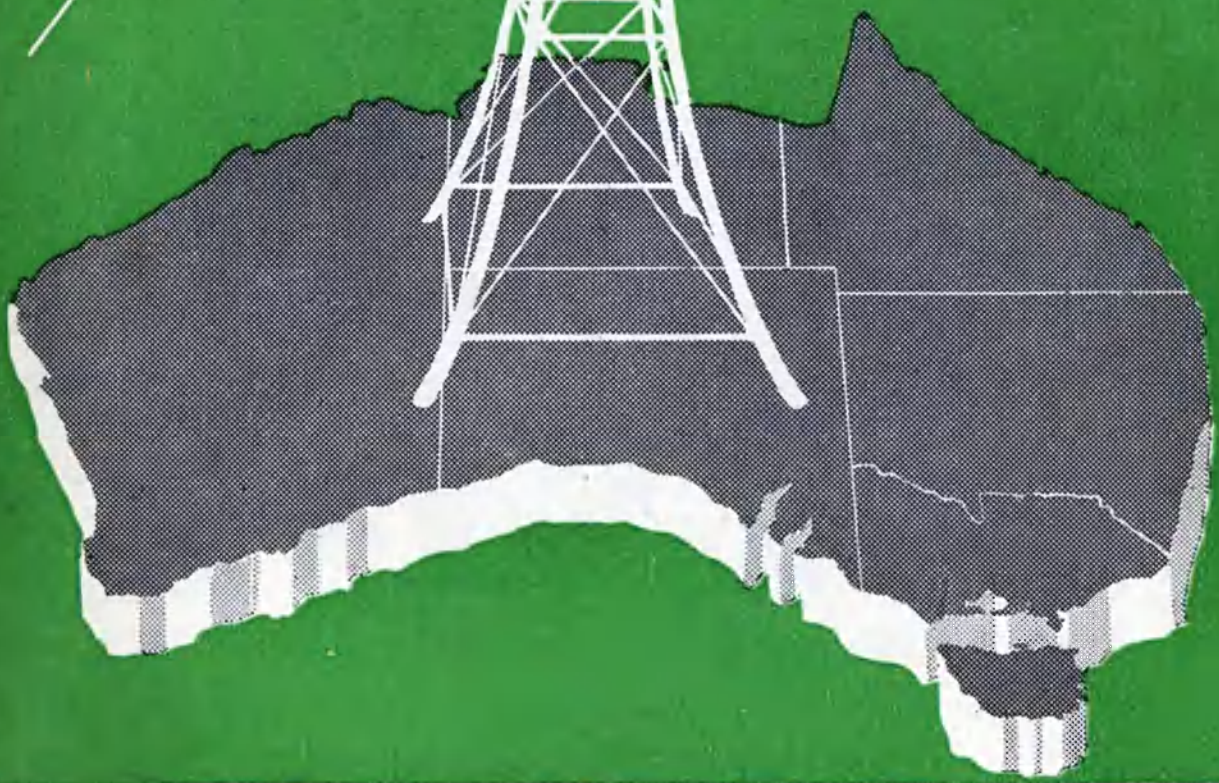
AMATEUR RADIO



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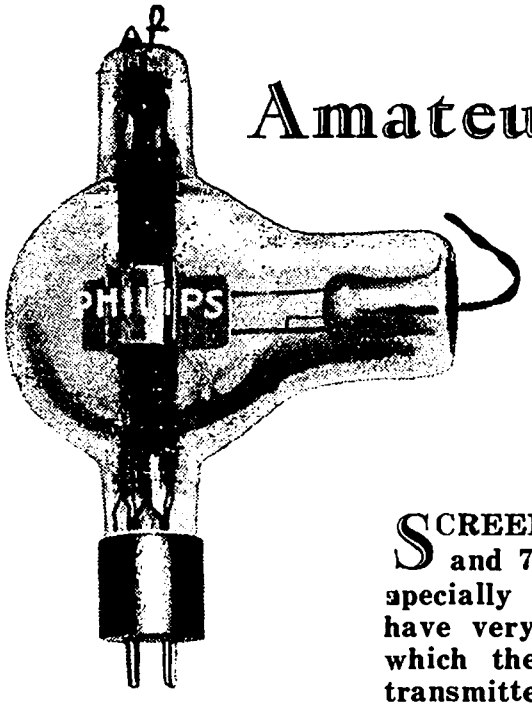
Screen Grid Valves

For

Amateur Transmitters



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Types:
QB 2/75, QC 05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A. Type.	Screen Grid Valves. QC 05/15.	QB 2/75
Filament voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistanee*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam of bulb	50	100
Max. length	160	210

*Approximate values.

PHILIPS

TRANSMITTING VALVES

EDITORIAL

Within a very short time of the appearance of this editorial in OUR magazine my year of office as Victorian State President will have terminated, and another (and I hope more worthy) member will have been installed in the Presidential chair. It is therefore with great pleasure that I accept the invitation of the Magazine committee to use this month's "Editorial" to give to "Hams" generally some idea of what has been accomplished during the past financial year, i.e., July 1, 1933, to June 30, 1934. Probably the greatest effort, and perhaps the one which will have the most effect on Australian Amateur Radio enthusiasts, is the publication of "Amateur Radio," which I am pleased to say has had a marvellous reception from "Hams," not only in our own country, but Internationally as well. It was with a certain amount of trepidation that the Council of the Victorian Division undertook the organising and financing of the project. This is a much greater responsibility than may at first be apparent to one not immediately concerned in its production, and I can assure "Hams" generally that had it not been for our absolute faith in the loyalty of the gang, this responsibility would not have been accepted. Whilst our efforts in producing the magazine have, according to reports received, been an unqualified success, the financial side of it is still providing us with more worry than it should. This state of affairs can easily be eradicated by just a little harder effort on the part of our Interstate brethren. The highest praise is due to the N.S.W. Division (A.R.A.) for their magnificent effort in the interest of OUR OWN publication, and, while I feel that all States have worked hard in its interests, I must confess to the thought that a greater PUSH from us all would bring the desired result. Another 200 copies issued per month would bring a fine feeling of security in its wake, and just ONE full page advertisement from each of the States other than Victoria would, with the ones we already have, make the magazine absolutely secure. Personally I am so certain of the genuineness of all "Hams" that I refuse to consider the possibility of any one of them letting his gang down, and so I confidently appeal to ALL for just that one big effort to assure the success of OUR MAG. Regarding the general working of the division, the annual report to be presented at the Annual General Meeting (at which all members should make it a point to be present, in their own interests) will show a remarkably satisfactory state of affairs, which I am sure will have a pleasing appeal to all members. Particularly is this the case from a financial viewpoint, the position in that respect being that, for the first time for some years, our budget has been balanced. To effect this desirable object your Council has worked untiringly, giving up to affairs of the Institute much valuable time, which in many cases should have been devoted to their personal business. A further source of gratification is the splendid increase in our numerical strength, not less than seventy-six (76) new members having been enrolled, and this, coupled with the fact that several unfinancial members have paid up back subscriptions, puts the Institute in a very enviable position. In this regard too much praise cannot be given to our Hon. Secretary (Mr. J. Winton), and his very able assistant, Mr. T. Powers, who have been indefatigable in their efforts in this direction, and they deserve the special thanks of all for what they have accomplished. At the present time your Council are endeavouring to obtain more suitable accommodation, in order that we may function more in keeping with our avowed objective. It is impossible to hold proper meetings in comfort in the present confined space, and the possibility of attempting transmis-

sions from these premises would be nothing short of farcical. It is quite possible that even yet the annual meeting will be held in a new home, but not very probable. In conclusion, as one who knows the needs of your Institute backwards, I very strongly appeal to all members in the coming year for THREE things:—(1) Absolute loyalty to the new President and Council about to be elected; (2) a very special effort to bring all "Hams" into the fold; (3) every unfinancial member to make himself financial; and now, in saying farewell to you all as President and Chairman of the Council, everything that has been successfully accomplished is solely due to my colleagues, and to them I offer my sincerest thanks, and I wish to have them all know that I never hope to meet a finer or more enthusiastic body of gentlemen.—73.

GEORGE F. THOMPSON.

Audio Amplifiers

By H. R. James, VK3LH.

Audio amplifiers? "Oh," you say, "that's old stuff." They are either resistance, transformer, impedance or direct coupled. "Oh, yes, I know all about them." Maybe you do, but if you do you ought to be able to answer these questions.

(1) Suppose you have a power amplifier with two 250's in push-pull. How much gain ought the amplifier to have in order to get full power from the 250's and only require a reasonable voltage from the detector or pick-up?

(2) Suppose you want to build a set for operation on batteries. From the standpoint of comparative gain,

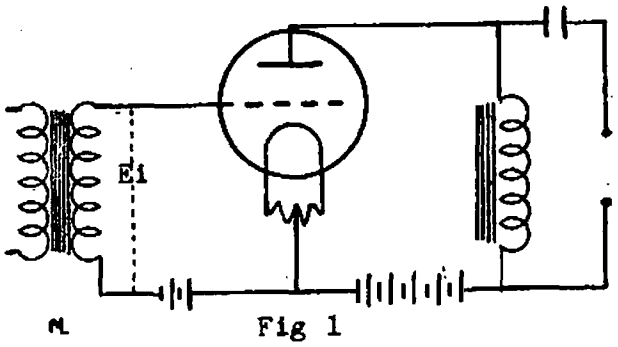


Fig 1

power output and plate current consumption what type of amplifier would you use, what type of tube in last stage? Should the power stage be single tube or push-pull?

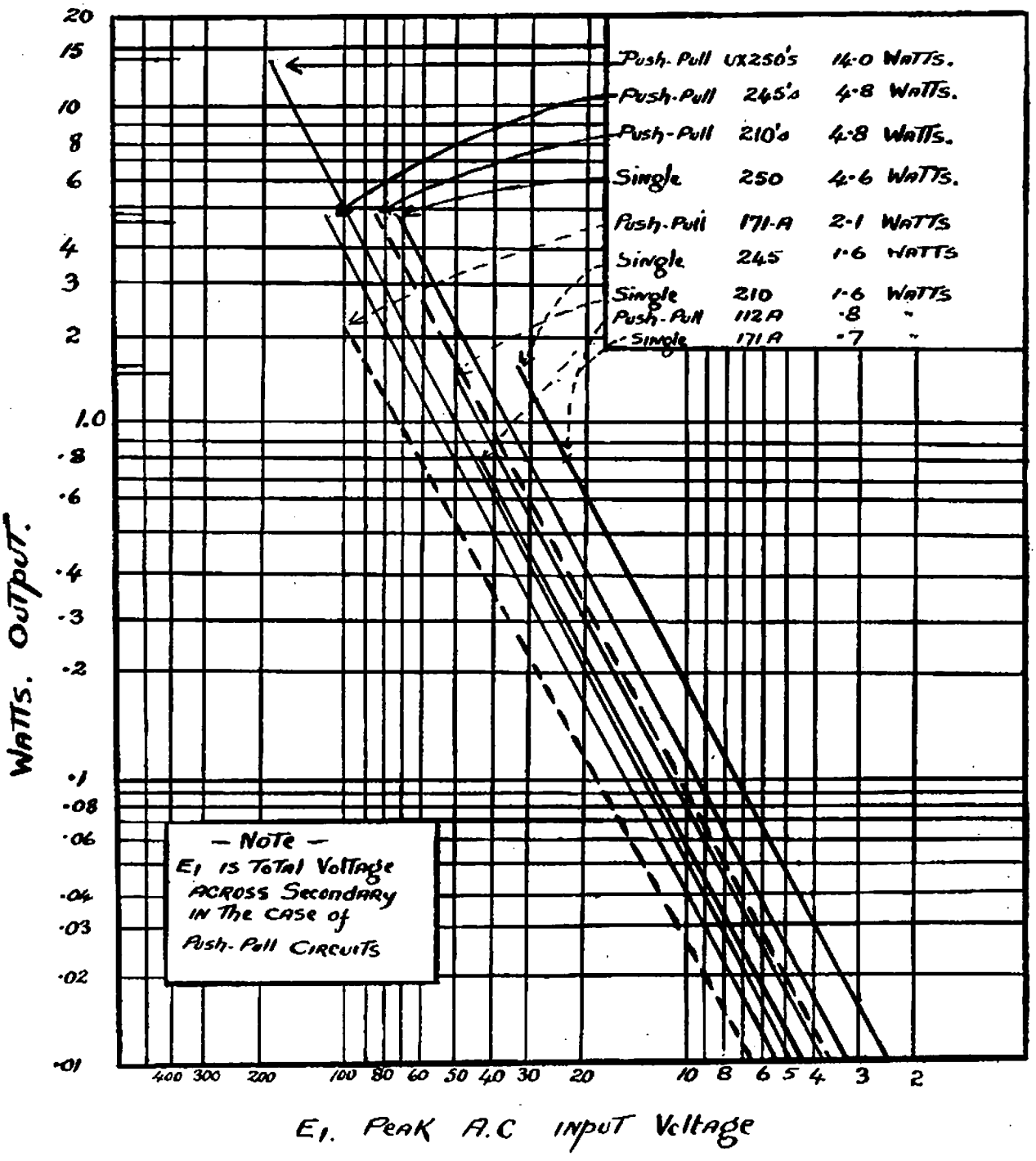
(3) Can you determine, without going to a lot of testing, how much "C" bias is required on a particular tube in an amplifier, to prevent that tube from overloading?

(4) Suppose you had a two-stage transformer coupled amplifier, could you determine how much A.C. voltage was required across the input to produce, say, 20 volts across the output?

Do you know the answers? If you do, then you know your amplifier theory pretty well. But if you don't then read on.

In analysing an audio amplifier from almost any angle the place to start is at the output, working back towards the input of the amplifier. We generally know how much power output we want or what type of tube we are going to use. On either of those points depends the design of our amplifier.

First of all, let us look at the power stage. Power tubes have certain definite output ratings. For example, a 171A is rated at 0.7 watts; the 250 is rated at 4.65 watts. But it does not mean that if we use a single 250 we just naturally get 4.65 watts. The rating of 4.65 watts is simply an indication of the maximum power which the 250 can supply, and the actual power output may be anything from 4.65 watts down to zero, depending upon the amount of A.C. voltage we apply to the grid of the tube. This is the important factor. Fig. 1 is a simple single tube amplifier. To analyse this circuit with regard to A.C. input voltage and A.C. output power the important characteristics are:—The A.C. input voltage, the amplification constant of the tube, the plate resistance of the tube, the impedance of the load in the plate circuit and finally the D.C. grid and plate potentials. If (Ei) is the A.C. in-



put voltage, then the A.C. voltage Ep developed in the plate circuit of the tube will be (1) $Ep = \mu Ei$, where μ is the amplification constant of tube. This A.C. voltage in the plate circuit will force an Ip current through the plate resistance of the tube, and the load resistance. The A.C. plate current will therefore be

$$(2)\quad Ip = \frac{\mu Ei}{Rp + Ro}$$

where Rp is the plate resistance of tube and Ro = load resistance.

Now the power output ratings of al power tubes are based on the assumption that the tube is working into a load resistance equal to twice its plate resistance, under which conditions the tube can supply the maximum amount of undistorted power. That is (3) $Ro = 2Rp$.

Substituting this value in the above formula we have

$$(4)\quad Ip = \frac{\mu Ei}{Rp + 2Rp} = \frac{\mu Ei}{3Rp}$$

Now the power developed in a resistance is equal to the resistance

times the current squared. Therefore, the power (P) delivered by the tube will be equal to (5) $P = Ip^2Ro$, and substituting the value of Ip given in equation (4) we have

$$(6)\quad P = \frac{\mu Ei}{3Rp}{}^2Ro = \frac{\mu^2Ei^2}{9Rp^2}Ro.$$

Since $Ro = 2Rp$, the formula can be simplified to

$$(7)\quad P = \frac{\mu^2Ei^2}{9Rp^2}2Rp = \frac{2\mu^2Ei^2}{9Rp}$$

Now the maximum amount of power a tube can deliver is ordinarily limited by the grid bias on the tube, for the peak value of the input A.C. voltage must not exceed the D.C. grid bias. If we revise the preceding formula so that it is in terms of peak A.C. input voltage we have

$$(8)\quad P = \frac{\mu^2Ei^2}{9Rp}$$

where Ei = peak A.C. volts applied to grid of tube μ = amplification constant of tube and Rp = plate resistance of tube.

This formula can be simplified for any given type of power tube by substituting in the formula the proper values of plate resistance and amplification factor. For example, for the 245 tube Rp = 1900 ohms and μ = 3.5, therefore

$$P = \frac{3.5^2 \times Ei^2}{9 \times 1900} = \frac{.67Ei^2}{1000}$$

This formula gives the power in watts. Since we frequently rate tubes in terms of milliwatts we can multiply the formula by 1000 to get power in milliwatts. That is $Pmw = 0.67Ei^2$. These simplified formulae have been worked out for the most commonly used power tubes, both single and push pull. They are given in Table I.

We can check the accuracy of these formulae by an example, for the maximum value of Ei can be taken as equal to the D.C. bias on the tube. The 171A requires a bias of 40 volts;

$$\text{therefore } P = \frac{40^2}{2.1} = \frac{1600}{2.1} = 730$$

milliwatts, and the tube is rated at 700, so our formula is accurate within about 4 per cent., more than sufficiently accurate for practically all purposes.

Now, knowing our formulae are correct we are ready to determine how the output of any tube varies with the A.C. input voltage. To do this we need simply to substitute for Ei various values from zero up to a value equal to the rated "C" bias on the tube. This has been done, and the results are summarised in the curves of Table 1. For the present let these curves serve simply to indicate that the rated power output of any power tube is not obtained unless the tube is supplied with the maximum allowable A.C. input voltage. Take, for example, the curves for a single 171A, with 40 volts peak on the grid, rated output (700 milliwatts) is obtained; if, however, the grid excitation is only 20 volts peak the power output is 190 milliwatts. Since this is the case we must be sure that in designing audio amplifiers we base the design on this fact—the maximum A.C. voltage required on the grid of the power tube. Let us suppose that a type 250 tube is to be used as the output stage of a two-stage transformer coupled audio amplifier. The two transformers have turns ratio of 3 to 1. We want to determine how much 'C" bias is required on the first audio amplifier tube, and we want to know how much voltage the pick-up or detector must supply to the input of the amplifier to get maximum power from the 250. Fundamental circuit, Fig. 2. The 250 requires a peak voltage Ei of 84 on its grid to supply maximum output. This peak voltage of 84 volts must be obtained from the transformer T2. The voltage across its primary must therefore be

$$E3 = \frac{\text{voltage across secondary}}{\text{turns ratio}} = \frac{Ei}{T2} = \frac{84}{3} = E3 = 28 \text{ volts.}$$

where E3 = voltage across primary.

Therefore the tube V2 must supply 28 volts to the transformer in its plate circuit. This A.C. voltage in the plate circuit is equal to the A.C. voltage E2 on the grid of the tube × the amplification constant of the circuit. The tube is a 227, amplification factor 8, but in transformer coupled circuits it is only possible to realise about 90 per cent. of the actual MU of the tube. Therefore $8 \times .90 = 7$, approximately.

Therefore the voltage E2 must be

$$= \frac{\text{voltage in plate circuit}}{\text{effective MU of the tube}}$$

$= \frac{28}{7} = 4$ volts peak A.C. on the grid of V2.

Since, as pointed out previously, the peak A.C. applied to the grid must never be greater than the "C" bias volts, it follows that the bias C2 required on the grid of V2 must be 4 volts or more; 4.5 would be quite satisfactory.

The voltage E1 which must be supplied by the detector or pickup is equal to the A.C. voltage E2 across secondary of T1 divided by turns ratio 3. Therefore E1, the A.C. voltage across the primary of T1, is

$$E1 = \frac{\text{voltage across T1 secondary}}{\text{Turns ratio of T1}}$$

$= \frac{E2}{3} = \frac{4}{3} = 1.33$ volts,

which is the voltage the detector or pick-up must supply.

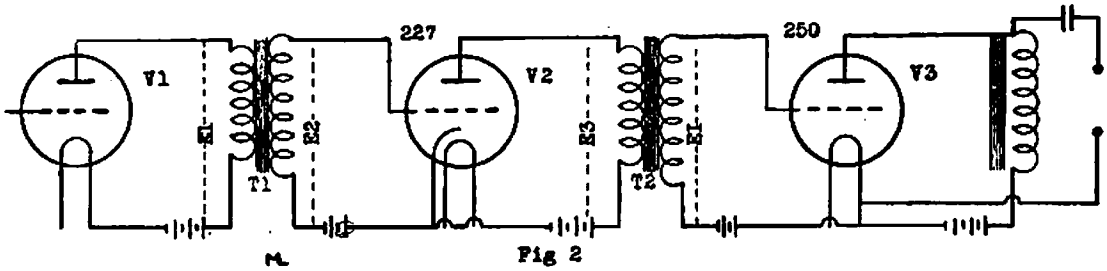


Fig 2

ted from a grid leak and condenser detector from which only 0.3 volts can be obtained without serious distortion. The voltage Ei applied to the grid of the 250 will then be Ei = 63 × 0.3 = 18.9 volts, and with this A.C. voltage on the grid, the power output (Fig. 2) will be only 0.29 watts.

Many of us prefer to use resistance or impedance coupled amplifiers. Suppose we had a single 250 and wanted to supply it from an impedance coupled amplifier, asuming our input to still be 0.3 volts, the gain of the amplifier must be

$$G = \frac{\text{peak voltage required by 250}}{\text{peak voltage from detector}}$$

$= \frac{84}{0.3} = 280$, the required gain of amplifier. Now in an impedance coupled amplifier the only gain is due to the tubes. Suppose we were to use 227's. Their amplification constant is 8, and, assuming we get 90 per cent., the actual gain per stage will be out 7. Therefore, the total number of stages required will be

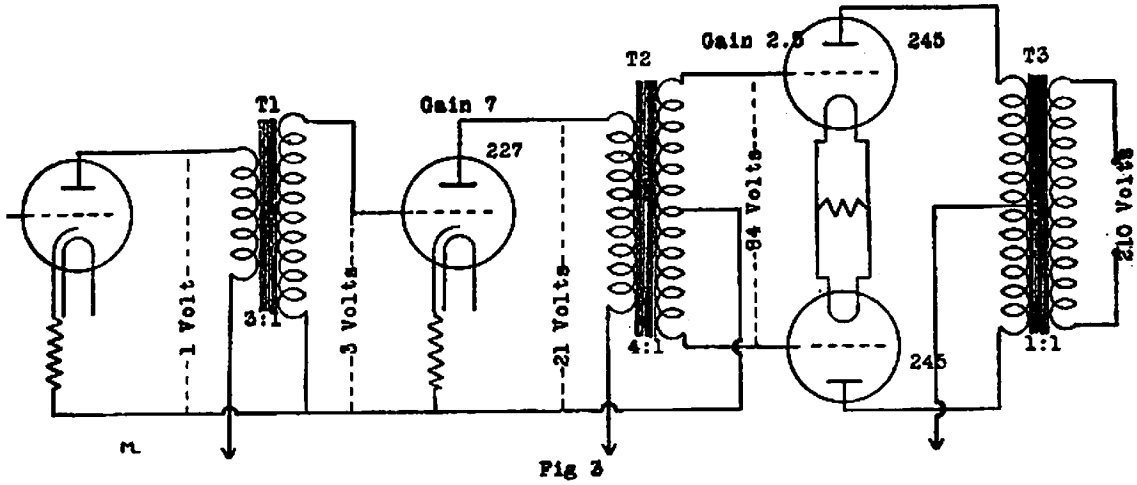


Fig 3

The voltage gain of the entire amplifier can be determined by multiplying together the various factors we have separately considered. Total gain—

$$G = T1 \times V2 \times T2$$
$$= 3 \times 7 \times 3 = 63$$

Suppose such an amplifier is operated from a grid leak and condenser detector from which only 0.3 volts can be obtained without serious distortion. The voltage Ei applied to the grid of the 250 will then be Ei = 63 × 0.3 = 18.9 volts, and with this A.C. voltage on the grid, the power output (Fig. 2) will be only 0.29 watts.

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$$\frac{\text{Total required gain}}{\text{gain per stage}} = \frac{280}{7} = 40$$

stages required.

Think of it! But I'll bet there are some who are trying to load a 250 to maximum with one or two stages of impedance coupling. If one has a

special liking for impedance coupling with A.C. tubes, high MU tubes must be used. From these tubes a stage gain of about 20 can be obtained, so the number of stages required will be $\frac{280}{15} = 19$ stages. Rather excessive, we all agree, but with the latest type tubes this can be brought a little lower. Ordinarily an impedance amplifier uses three coupling units and two valves between input and power valve, and therefore the gain due to the two valves will be $15 \times 2 = 30$. The voltage required from the input will be A.C. input voltage

$$= \frac{\text{voltage required by 250}}{\text{amplifier gain}} = \frac{84}{30}$$

= 2.8 volts.

An amplifier in common use to-day is a two-stage transformer coupled affair, with two type 245 valves in push-pull. The A.C. voltage across the secondary of the push-pull transformer can be obtained from the curves of Fig. 3 by noting that the curve for 245's in push-pull ends at approximately 120 volts, which is the peak A.C. voltage. Since the push-pull input transformer has a ratio of 4 to 1 the A.C. voltage across its primary given by preceding valve is $\frac{120}{4}$ or 30 volts. The gain of the tube is 7, so the peak A.C. signal on the grid of this tube will be $\frac{30}{7} = 4.3$ volts. Therefore for safety the bias should be about 5 volts, which means that the plate voltage ought to be about 100. The A.C. voltage required from the detector is 1.4 volts, since the coupling transformer has a ratio of 3 and 4.3, the voltage on the secondary divided by 3 gives 1.4 as the primary. If the input was only able to supply 1.0 volt the voltage to the power tubes would be $1.0 \times 3 \times 7 \times 4 = 84$ volts, and from Fig. 2 the power output with 84 volts will be 3 watts.

BLACKENING ALUMINIUM.

By VK3RX.

The following process is largely used by camera makers and metal workers to obtain a smooth black finish to aluminium panels and articles without the use of paint or enamel.

It is in the form of a bath into which the aluminium is dipped.

Every care should be taken to keep it away from any domestic utensils or food, as it is deadly poisonous.

The bath is prepared as follows:—

Dissolve:—1 oz. ferrous sulphate, 1 oz. white arsenic in 12 oz. hydrochloric acid, then add 12 oz. water.

For panels it is advisable to bend out of sheet lead a tray large enough to take the whole panel when it is lying flat. Pour the solution into the tray, then dip the panel in rapidly and withdraw, holding it by the edges only. Allow it to drain, and repeat until the colour is deep enough.

Then dry off with fine sawdust, and when quite dry brush or spray with thin, clear lacquer to preserve the finish.

The bath may be used repeatedly till exhausted, and, of course, smaller quantities could be made up by keeping the same proportions of the chemicals.

HARMONICS.

All stations working on the 14 m.c. band are asked to keep watch for FF8SUD (14,156 k.c.), who is endeavouring to contact Australia, at all hours. The QRA of FF8SUD, who is the only amateur in his region, is Jean Barbier, Aoulef (Sahara), via Algiers, North Africa.—BERS195.

The following amateurs, who have been contacted in the past five months by VU2FY, of Coromandel, South India, are reminded that they owe him a QSL:—VK2FY, 2ZW, 2DQ, 2VG, 2XU, 2NR, 3FJ, 3HQ, 3GQ, 3ZL, 3DT, 4BB, 5MU, 5UK, 5GF, 5NR, 5RX, 6FO, 7NC, 7JB. If you have not done your part VU2FY would esteem it a favour if you would do so, because he has mailed you all his QSL card confirming contact.—BERS195.

BERS195 (Moonta, S.A.) writes:—Has anyone heard VIT (Townsville commercial C.W. station) on about 7150 k.c. each morning at 07.18 E.S.T. working with VIJ. The QRM he causes blots out everything for kilocycles around. It is about time something was done to eliminate VIT from the 7 m.c. amateur band.

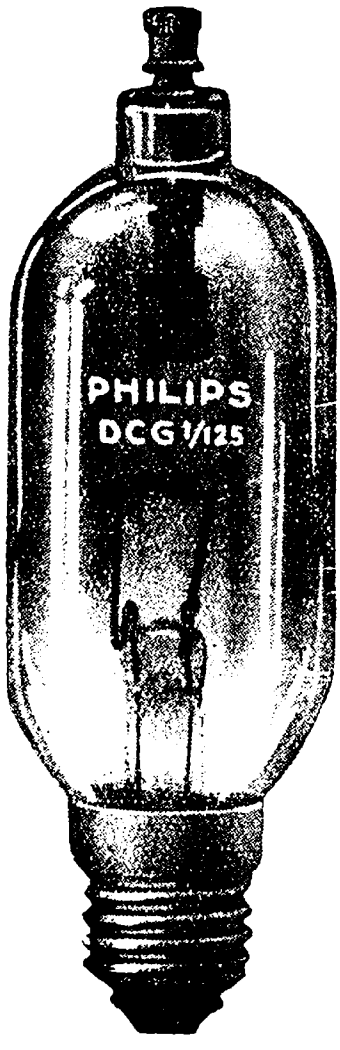
VU2FY, Coromandel, South India, has already announced his intention of trying to win the Indian section of the October "Centenary" contest.

Philips DCG 1/125 New Mercury Rectifying Tube

Characteristics:

Filament voltage, 2.0V.
Filament current, appr. 5A.
Max. permissible inverse, peak voltage, 3000V.
Max. rectified current, mean value, 125 mA.
Max. permissible peak value of rectified current, 600 mA.
Voltage-drop in tube, appr. 16V.
Output, 120-170W.
Largest diameter, 50 mm.
Total length, 150 mm.

The permissible A.C. anode voltage, and the corresponding D.C. voltage continuously supplied by this tube, depend to a large extent on the circuit employed (see below).



Description.

This rectifying tube has been constructed to supply current for transmitters and power amplifiers. Its cathode consists of a barium-oxide filament, which is characterised by its very high electronic emission at a relatively low current consumption. The DCG 1/125 is a low-vacuum tube; the internal voltage-drop is only 16 volts approx., and is practically independent of the value of D.C. supplied.

Though the dimensions of the tube are comparatively small the efficiency is very high, due to the low loss of energy in the tube.

Circuits.

An inadmissibly high anode dissipation, such as occurs in high vacuum rectifying tubes, can never be reached in practice with the DCG 1/125 on account of its very low voltage-drop. Further, only the highest current supplied by the filament and the highest voltage which the tube can bear

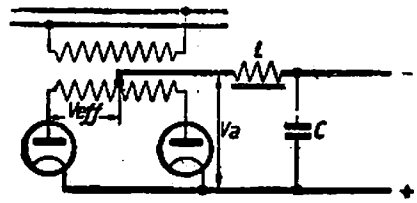


Fig. 1

with negative anode should be taken into account. As a rule, the latter is much lower than for high-vacuum tubes, so that to obtain a sufficiently high D.C. voltage it may be advisable to use a special circuit in which pairs of tubes are connected in series, as indicated in Fig. 4-6. On account of the low voltage-drop in the tube such a circuit does not present any difficulties.

In the table below the D.C. voltage supplied and the mean value of D.C. when using the wiring diagrams as indicated in Fig. 1-4, are stated. The value of Veff has been selected with a view to attain the maximum permissible inverse voltage (3000 volts).

Circuit.	Veff.	D.C. Voltage Va.	Maximum D.C. (mean value).
Fig. 1	1050 volts	950-1500 volts	250 milliamps
Fig. 2	1050 volts	1200-1500 volts	375 milliamps
Fig. 3	1050 volts	1350-1500 volts	500 milliamps
Fig. 4	2100 volts	1900-3000 volts	250 milliamps

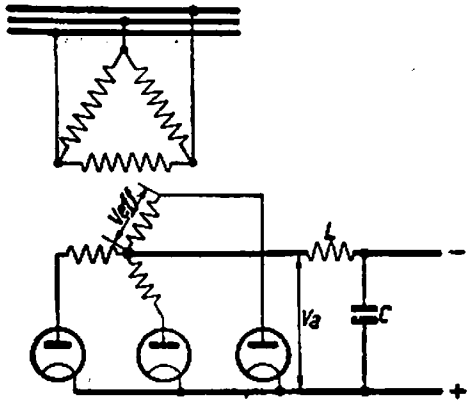


Fig. 2

The D.C. voltage (Va) supplied depends on the load of the rectifier and the capacity of the smoothing condenser C. The upper limit will only be reached when the D.C. supply is zero.

In addition to the circuits specified in these instructions it is, of course, possible to make use of other circuits as well; in this case the following points should always be considered:—

(1) The inverse voltage may never exceed the value of 3000 volts.

(2) The mean value of the D.C. may not exceed 125 milliamps per tube.

(3) The peak value of the D.C. may reach 600 milliamps maximum for each tube.

(4) The temperature of the air surrounding the tube may not exceed 50 deg. C.

It may occasionally be desirable to connect several tubes, type DCG 1/125 in parallel. On account of the negative characteristic of this

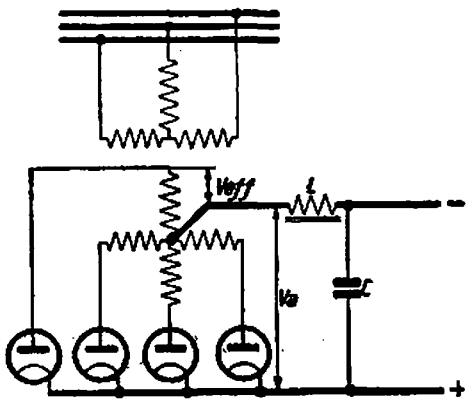


Fig. 3

tube it is essential to insert suitable resistances or smoothing coils in the anode circuit of each, when they operate in phase and are connected in this manner.

In order to obtain well-smoothed D.C. it is advisable to insert a smoothing coil in the D.C. circuit. This smoothing coil must always precede the first smoothing condenser.

Connection.

The tube has a screw-socket for the filament connection, and a contact on top of the bulb for the anode connection. The tube must always be mounted vertically, e.g., in such a way that the screw-socket is pointing downwards. Care should be taken that air can circulate freely around the tube. If the temperature of the air surrounding the tube is higher than 50 deg. C. artificial cooling will be necessary.

In practical use it is advisable to use A.C. for feeding the filament. It is also very impor-

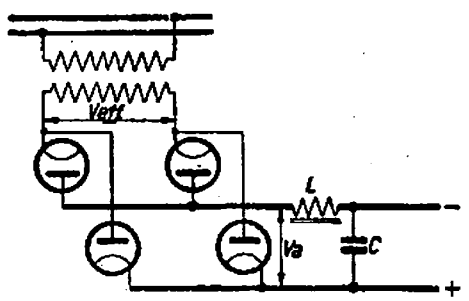


Fig. 4

tant to adjust the filament voltage exactly to the indicated value of 2.0 volts; this voltage must be measured as near as possible to the filament in order to obtain an accurate figure. A higher or lower voltage will result in a much shorter life of the tube. Adjustment of the filament voltage can be effected by means of a resistance inserted in the primary of the filament current transformer. Connection to the positive pole of the D.C. circuit is to he taken from the centre tapping of the secondary of the filament current transformer or from one of the two ends, as the case may be.

Switch on the filament current, and allow 1-2 minutes for the tube to heat up sufficiently. Only when this condition has been attained should the anode voltage be switched on.

Adjust the filament voltage exactly to the value indicated, but it must be remembered that the D.C. supplied by the tube may not be adjusted by means of a filament resistance.

The voltage and current may never exceed the maximum values indicated.

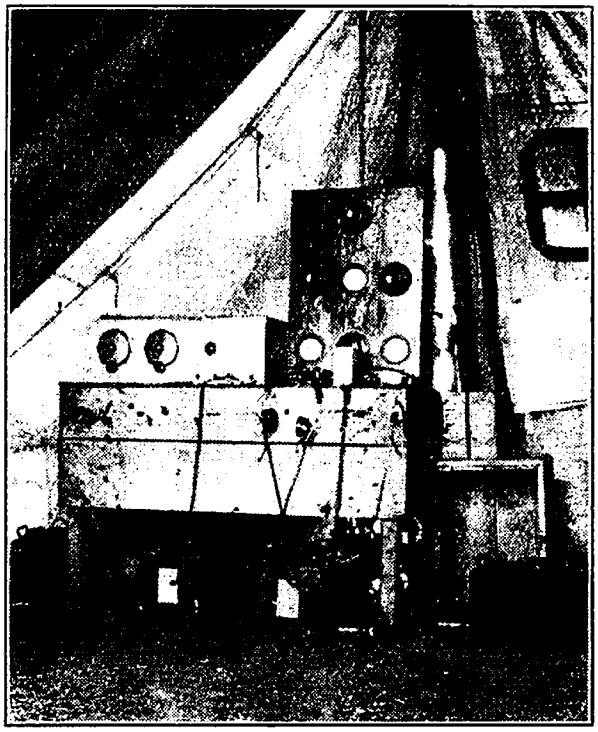
Before switching off the filament voltage, break the anode voltage. If the filament voltage is interrupted during operation of the tube the latter will, in some instances, apparently continue to function normally. Never make use of this, however, as a means of economising on current, as it will have a detrimental effect on the life of the tube.

As the load of this tube is not limited by the very high saturation current, it is advisable in view of a possible short-circuit in the D.C. output connections (especially the smoothing condensers), to insert a fuse in the anode circuit of each rectifying tube.

DENILIQUIN, MAY, 1934.

Every six months R.A.A.F. cross-country training flights are made to Deniliquin. On this occasion 3D4 was unable to go over from Lake Meran owing to a serious illness, but 3B1, 3B3, 3B5, and 3C2 made the trip across. Plans had to be made at very short notice, but largely due to the initiative and organisation of 3C2 everything ran as smoothly as clockwork. The first schedule had been arranged for 0800 hours on the Monday, so arrangements were made for the four VMC men to go across on the Sunday afternoon. 3C2 took his transmitter and receiver, but was undecided about a power supply. It was not known what facilities 2B1, the reserve station at Deniliquin, had for working from the 'drome, so it was thought wise to run out to Lake Meran and borrow 3D4's M-L. The trip to Deniliquin was uneventful, and, after tea, they all adjourned to 2B1's shack, where the plan of campaign was mapped out. As it was too late to erect the portable out at the 'drome then, it was decided to forward the weather reports at 0800 hours the following morning from 2B1.

Monday dawned beautifully sunny and calm, truly ideal flying weather. The plan decided on the previous night was carried out, and 2B1 and 3B4 remained to contact VJS and forward the weather reports, whilst the other three operators went out to the 'drome and proceeded to erect portable 3C2. The R.A.A.F. ground squad had the tent and one mast ready erected, and, whilst 3C2 connected up the transmitter and receiver 3B5 and 3B1 measured off the aerial and erected the other mast. By the time the aerial was up the station was ready, and VJS was contacted immediately. 3B1 then slipped into Deniliquin and brought out 3B4 and 2B1. From then on all traffic was handled from portable 3C2, and signals were reported, R9 to R max., right throughout. A few minutes later a Moth arrived, and at 1042 hours the first Wapiti came in. Three others followed in fairly quick succession. These departed again at intervals after lunch, the last arriving back at 1750 hours. All weather reports, arrival and departure messages, etc., had been received and sent throughout the day without a break. That evening 3B4 and



Portable 3C2.

3B1 wrote up the events of the day, while 3B5 and 3C2 explored the town.

Tuesday dawned with the promise of as perfect a day as Monday. The VMC operators had been promised flights, and, as the plane was going up at 0700 hours, all were up bright and early. After breakfasting at 0630, 2B1 was called for, and the short distance out to the 'drome was made in double quick time. The plane was ready to go up, and, whilst 3B4 and 3C2 got the station on the air, the others had a fly over Deniliquin. Unfortunately, time did not permit of making another flight, so 3C2 and 3B4 have a promise of first flight on the next occasion.

Shortly afterwards the first machine left Point Cook, followed at short intervals by the others. They had all arrived by 1230 hours, and as the VMC operators, who had all been extremely busy at their homes, were anxious to get back as soon as conveniently possible, it seemed certain that they would be able to make the trip home that afternoon, instead of having to wait until the following morning. It was decided that the station would be dismantled after "clearing" the machines, and all should go in to 2B1 to take the arrival messages. This plan was carried out, and by 1500 hours the last message was through, and the job was done.

Most trips have their humorous side, and this one was no exception, because it was discovered whilst on the way home and quite three miles out of Deniliquin that all had left their pyjamas at the hotel. After rectifying the omission an uneventful trip back was made.

In all, 42 messages were handled without a miss, and in all respects a hundred per cent. job was put over. The success was due in no small measure to the fine co-operation of 2B1, as well as the initiative and hard work of the VMC operators.

On February 1 a new call system was inaugurated in the Tokyo District. The JI prefixes have been cancelled and all calls which formerly started with JI now start with J2, beginning with J2A. The former J1DO is now J2GX; J1EE is now J2HI; J1DM is now J2GW; J1EK is now J2HE; J1DV is now J2HV.

STATION DESCRIPTION VK2KA.

Paul Truman, Wollstonecraft.

Experimental station VK2KA is situated at Wollstonecraft, a suburb on the North Shore line, Sydney.

The transmitter is a four-stage crystal controlled, for use on CW or telephony.

The bottom shelf contains the crystal oscillator, which is a 59 in a Tri-tet circuit.

The middle shelf contains the two buffer-doubler stages. The first stage employs a 247 and the second a TB04/10.

The top shelf contains the final amplifier, which consists of two 210s in push-pull. The final stage is inductively coupled to the preceding stage. The second buffer stage plate coil is centre-tapped, and wound on a 2½ inch former. A coil wound on a ½ inch former is bolted in the centre of the plate tank coil. The ends of this coil go direct to the grids of the final tubes; the centre tap of this coil is taken to the bias resistor of the final amplifier. This method of coupling has been used for over a year, and has proved to be more efficient than the usual capacity method. More output is obtained, and no difficulty was experienced in balancing the push-pull tubes.

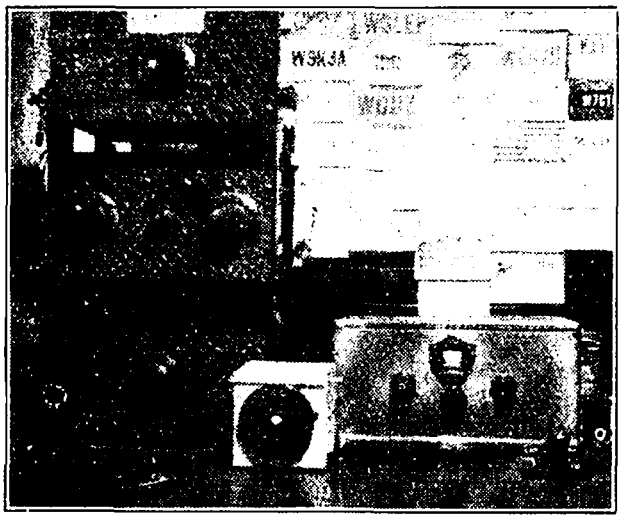
Behind the receiver is the modulator, which employs the Telefunken circuit. The modulator tube is an E415. Two stages of speech amplification are used, both employing E415 tubes. A carbon mike is used, but cannot be seen in the photo. The pick-up and turn-table are in the right of the photo.

The receiver and monitor are on the right of the transmitter. The receiver consists of an electron coupled 57 det. and 227 choke coupled audio.

A combination of resistance and condenser reaction is used in the receiver. By turning a switch an extra stage of audio, using a 247 and driving an 11 in. dynamic, can be utilised. Signals can be copied on the speaker.

The monitor uses an A441 double grid tube, which only requires 9 volts B voltage.

The power supplies are housed in a cabinet under the operating table.



Two supplies are used for the transmitter.

The first power supply consists of an 800 volt C.T. home-made transformer, and 80 rectifier and 6 mfds. and a 30 hy. choke.

The crystal oscillator and two buffer doubler stages are driven by this supply.

The second power supply drives the final amplifier, and consists of a 1200 volt C.T. transformer, two U8 rectifiers, 6 mfds. and 30 hy. choke. The U8's have their plates joined together, and are used in a full wave circuit.

A separate transformer is used for the filaments of the final amplifier. Grid leak bias is used for all stages.

The power supply for the speech amplifier is obtained from the receiver pack, which uses a type 80 in the usual circuit.

A half wave 40 metre Zepp is used for both transmitting and receiving. Thirty-one countries in five continents have been worked on the present rig operating on 40 metres only.

THE 28 MEGACYCLE BAND.

What are We Going to do to Exploit It?

The following extract of an article in "Break In" we have received from VK2YI, and are printing by courtesy of the N.Z.A.R.T.:—

An enviable record in connection with the pioneering of the first high-frequency bands available to the amateur was built up by New Zealand transmitters in the early days of amateur radio. Since then, however, it would seem that we have been too content to let things slide in doing nothing but duplicate the work of leading amateurs in other countries This is particularly unfortunate, since we are ideally situated, as a comparatively small sea-surrounded country, for well-nigh perfect reception conditions. We, in fact, should be playing a leading part in investigating the possibilities for long-distance communication of the 28 mc. and 56 mc. bands.

Our general attitude is that 28 mc. is useless for DX purposes, because we once listened in on that band for an hour and heard no signals. Again, we listened at a time when an American station was definitely known to be on test, and we heard him not. Therefore, we say 10 metres is a hopeless band. How futile!

How Discoveries are Made.

There is only one scientific way to find whether 28 mc. has any DX. possibilities. All who have worked on 20 metres know that it is a most erratic and tricky band, at times perfectly dead, and a few minutes after alive with real DX. It is therefore not impossible than 10 metres is still more eccentric, but able to provide, even if only a few times a year, unheard of DX facilities. Who knows? There is one way to find out, and it has never been tried out, in spite of its simplicity.

What is required are stations in every continent working over a set period of 24 hours at the week-end, say, from midnight Saturday to midnight Sunday, N.Z. time. A simple procedure of transmitting for 15 minutes and listening for 15 minutes over the full period would be satisfactory. Then if all the world were told beforehand that New Zealand amateurs would be doing this, and amateurs in other countries were carrying out the same procedure during the same period, it would certainly be discovered if 28 mc. was behaving itself during that time. Very likely there would be no contacts the first time, as possibly the band is effective at only certain times of the year. It is obvious, then, that the suggested tests must be carried out every week-end for at least a year. Preferably, of course, the test would be made every day for a year, but this ideal is quite impossible of attainment. The week-end tests for a year would certainly show just where the 10-metre band stood. And what an accomplishment for N.Z. amateurs to pride themselves on afterwards!

Will YOU Co-operate?

Any amateurs willing to make this suggested sacrifice of their time in the interests of amateur radio are asked to communicate with the editor, who will undertake to discuss the matter with overseas amateur organisations with a view to arranging the tests on the only basis which can lead to the exploitation and the discovery of the possibilities of the 28 mc. band.

Well, Australia, what about pulling in with N.Z. and starting things moving similarly?

HARMONICS.

A handy support can be made for quick changing of tank coils in a multi-stage transmitter by making use of a bakelite stand off insulators (hollow type), on sale at most radio stores.

Discard the wing nut and bolt and redrill hole to take banana (nickel-type) socket. The tank leads can be taken down through the insulator or from the outside, as desired. Wind tank coils with 10 or 12 gauge copper wire (in my case 2 in. dia.). Take the pretty cover off two banana plugs and solder either end of the coil well into a plug. If a neutralising coil is required this can be wound separately and fitted inside one end of tank coil, soldering one end to the end of the tank coil, the other end going via a piece of flex. to another banana plug and socket.—VK2OJ.

The Centenary Single Signal Super

By VK3HK.

(The second part of this article, with full constructional details, will be given next month.)

An up-to-date, efficient receiver will be an essential factor in winning the Centenary contest in October. This single signal super should not cost the ham more than about £12, possibly much less, to build. Success is fairly easy, providing these instructions are closely followed, and the theory of superheterodynes is fully understood. What is single signal? is sometimes asked. Say, for example, you are copying a C.W. signal on 7100 k.c., using a beat note of 1000 cycles or 1 k.c. This means the local oscillation causing the heterodyne is tuned to, say, 7101 k.c. (or it could be 7099 k.c.) Now, say, there is a station starting up on 7102 k.c. This would be heard along with the first signal, and cause QRM. This is all due to the broad tuning response of the detector, since it will receive the signal on 7102 k.c. at practically the same strength as the one on 7100 k.c. (an impossible thing to do, but it will explain things). Then the 7102 k.c. signal would not be heard, as the detector will not respond to it.

This is true single signal effect. In practice a quartz crystal filter is used to provide the ultra selectivity, and is tuned to the intermediate frequency of a super heterodyne. The beat oscillator also beats with the intermediate frequency, and is always on the same side of resonance, so that only one beat note is heard per station instead of one each side of resonance.

Circuit Analysis.

Employing seven tubes, the first is an sg. rf. amplifier exactly as would be used in the average RF and regen. detector set. This stage should certainly be used as it eliminates any double spot tuning entirely, which is due to the comparatively broad tuning of the first detector. In the second tube, 2A7, we have a triode oscillator using cathode, No. 1 grid (osc. grid), and No. 2 grid (osc. plate). In the same bulb we have an sg. first detector using cathode, No. 3 grid (control grid), No. 4 grid (sg. grid) and plate, Thus it is seen that the first detector electron stream passes through, and mixes with, that of the local oscillator, so giving the beat or I.F. signal

The following two I.F. stages are standard 460 k.c., and the same construction as is used in B/C receiver practice, but more care is required in decoupling the plate circuits, as precaution against instability, as two stages are employed. Air tuned I.F. transformers were used in the original, and are recommended. The I.F. filter ahead of this I.F. amplifier can be adjusted to pass a band width of a few cycles or so, and so increase selectivity to an extraordinary extent. The second detector circuit employs a diode, and is rather original for this type of receiver. This replaces the triode 56-plate bend detector formerly used, and is satisfactory in every way, and at same time makes easily obtained automatic volume control (A.V.C.), which is so useful in maintaining even volume on QSB phone. The beat oscillator for c.w. uses a 56 or 27 tube, and is a form of series Hartley, which is tuned from 500-5000 cycles either higher or lower than the intermediate frequency, thus giving the heterodyne, the adjustment being by a panel dial with a range of 10,000 cycles or so either side of resonance. The coupling between this oscillator and diode plates is simply an insulated lead from plate of oscillator taken to and twisted around diode plate lead, so forming a very small condenser coupling, which is all that is necessary for satisfactory heterodyning; too much coupling will cause diode to become paralysed. The rest of the line-up is standard practice in B/C supers, using the upper part of 2B7 as an sg. pentode audio driver, feeding the power pentode output. Phones, if used, are capacity coupled in the plate of the 2B7, but they are never used at the writer's station. DX comes through the dynamic speaker. Now for the actual construction. Actual measurements may vary according to the components used. The panel is 14 or 16 gauge aliminium, and 7 in. x 25½ in. All other is of 18 gauge, bolted securely together. The switches, SW1, SW2 and SW3, are mounted at convenient positions between oscillator

padder and beat oscillator control dial on panel.

Coil Construction.

The RF, detector and oscillator coil forms used were UY tube bases fitted with 2 inch lengths of bakelite tube, with outside diameter of 1½ inches. To make for easy adjustment of coil turns later when lining up the gang condensers, the bases have tinned wires of about 19 or 20 gauge taken through the prongs and soldered in position, and brought out through the former at the points the ends of the windings are expected to be. The coil ends are simply twisted around the ends of these wires where they emerge from the former, and are quickly adjusted or removed, so saving a lot of labour. When finally adjusted they are soldered, and coils doped with clear lacquer to hold turns fast. The 1050-2100 k.c. coil forms have the grid pin shorted to the cathode pin, as the band spread arrangement is not used.

I.F. Filter Construction.

The input and output transformers for the crystal filter were made from one 465 k.c. Radiokes air-tuned type I.F. transformer. These have a midget trimmer condenser in top and bottom of can adjustable from either end, and coils are supported on a wooden dowel, horizontally in centre. These coils are removable, so one condenser and one coil is removed.

This coil and condenser is then assembled on a pair of brass brackets in another coil can of similar size, and in the same fashion as the original transformer, so forming two transformers out of one. A careful part of the job now is to wind over, or half on either side on same former, a centre tapped coil of 140 turns of 40 D.S.C. wire, forming the input step-down transformer secondary. This coil must be wound symmetrically with regard to the primary. The output step-up transformer has a similarly wound primary to that secondary, but is not centre tapped and only 70 turns. Symmetry does not matter here. Both these coils need close coupling to their respective primary and secondary. These two transformers give an impedance step down and step up again of approximately 30-1 and 1-30 respectively, and matches the low impedance of the crystal resonator, increasing sensitivity and selectivity. particularly the latter. The condenser C10 is used to balance out the capacity of the plates of the crystal holder, and so prevent any capacity coupling through the filter. The quartz crystal only passes a narrow band a few cycles wide at the frequency at which it resonates, the I.F. amplifier being tuned to precisely the same frequency. The crystal holder can be constructed just like one used for an oscillator; an air gap mounting helps out selectivity somewhat. The switch S.W.1 is for shorting crystal out for straight super het. operation.

C.W. Beat Oscillator Construction.

The coil for this is wound on a 1½ inch diameter bakelite former with 125 turns of 30 D.S.C. wire tapped at 42. This is mounted within a shield can. The tank condenser, C.18, is a standard adjustable mica padder condenser as used for 175 k.c. B/C supers, with a maximum capacity of approx. .001 mfd., and is mounted on top of coil form in can. The resistor of 100,000 ohms in plate supply lead of this oscillator is necessary to stop stray coupling into I.F. amplifier circuits, which took place when it was left out. All the components of this oscillator should be mounted in shield box. All tube sockets in the set except the coil can be of the inexpensive wafer type, and that of this oscillator and also the first oscillator should be preferably shielded below chassis by means of a small aluminium cover over socket.

Automatic Volume Control.

When the signal is rectified by the diode second detector a negative voltage appears across load resistor (shunted by C.11), with respect to earth and cathodes of the R.F. and I.F. 58 tubes. This feeds back through the grid decoupling resistors, R.1, in each case to grids and biases the same tubes, thus cutting down the gain of the amplifier furnishing the signal. With the values given for grid bypasses and decoupling resistors of 58 tubes the system follows up the fast fading encountered in short wave phone reception excellently.

General Construction Pointers.

A good solid job should be made of both oscillators' wiring, and No. 16 bus-bar was used in the original. The first oscillator must be very stable to

get the full results from such selectivity as this design provides; in fact, both, but more so the first, as it is operating on a higher frequency. A tank capacity, i.e., padder, is used to provide fairly high C in first oscillator. This, however, cannot be carried too far, as the strength of oscillation falls off. The short wave bands are spread by means of series condensers, with tuning condensers. This method spreads the low frequency end of the band more than the high frequency end, which is very desirable with so many stations at this end. The 14 m.c. band oscillator coil is the same as that used for 7 m.c., as this is more stable than a coil actually for that band. The harmonic is very satisfactory. Taking the I.F. section, the sockets and I.F. transformers should be arranged so that the plate and grid leads are as short as possible to prevent any chance of instability and possible self-oscillation. It will be noticed that .5 mfd. condensers have been used for cathode and s.g. bypasses, as this increase in capacity completely cured some instability. They, however, should be of a noninductive type, or you will be looking for trouble. The switch, S.W.2, is for cutting out the A.V.C. when receiving C.W. signals and S.W.3 for switching in and out beat oscillator when phone or C.W. is received. A word about R7. This may appear unnecessary, but for best quality phone reception on the 200 mx. band the diode should be nearly fully loaded. This resistor cuts down the output voltage when the 247 or 2A5 pentode is used. A 245 or 2A3 or other triode could be used in audio, and changing R7 for an RF choke, of course altering the other resistor values in the audio stage to suit. The jack, J3, has extra contacts that break the screen circuit when the speaker is removed, so preventing the screen from running red hot. The power pack should give 250-300 volts for preference, but 180 volts would work o.k. This is left to the builder, as any power pack on hand could be used if suitable. Bring your heater and B supply leads out through a tube socket, and plug on back of chassis for ease of connecting up, but watch your heater leads for voltage drop, and preferably test voltage on tube sockets when set is running to see if you have 1.5 or 2.5 volts. While on heater voltage, if desired, 6.3 volt automobile type tubes could be used throughout, i.e., from left to right, 78, 6A7, 78, 78, 6B7 and 41 pentode. The beat oscillator, though, would have to be a s.g. tube, as no triode of this series is available; a 77 as an electron coupled oscillator would be satisfactory. The B supply for the country ham would be a bigger problem, though any B supply unit that is o.k. on a B/C receiver should be o.k., providing it will supply between 70 and 80 m.a. at 250 volts or less at 180 volts.

FIRST ANNUAL RECEIVING COMPETITION.

Conducted by the North Suburban Radio Club (3FY).

The competition is divided into three sections —(a) short wave code reception; (b) short wave fone reception; and (c) broadcast fone reception. Entries are strictly limited to members of the club. No handicaps will be recognised.

Conditions.—Section (a).—(1) The competition is to extend over a period of three weeks, commencing on July 2, at 12.01 a.m., and concluding on July 22, at 12 p.m.

(2) The winner of Section (a) will be decided by the number of countries received during the above period, such reception to be verified by QSL cards.

(3) The maximum time allowed for return of QSL's will be three months from the conclusion of the competition.

(4) All QSL's must bear a date mark.

(5) An entrance fee of 6d. will be charged each competitor for each section entered.

(6) The judges' decision is final.

Section (b).—(1) The winner of this section will be the competitor having the greatest number of QSL's from fone stations operating on the higher frequencies during the stipulated period.

(2) The highest wave-length in this section is 175 metres.

(3) Conditions (1), (3), (4), (5), and (6) of Section (a) will apply to this section also.

Section (c).—(1) The winner of this section will be the competitor having the greatest number of QSL's from fone stations operating on the broadcast band, during the stipulated period, taking into consideration condition (2).

(2) Melbourne and metropolitan A and B class stations will not be recognised.

(3) The wave-length for this section is to extend from 175 metres upwards.

(4) Conditions (1), (3), (4), (5) and (6) in Section (a) will apply to this section also.

The Secretary, Frank Maher (3FZ), appeals to "hams" who receive reports from entrants in this competition to QSL promptly, as they will receive a detailed report on their transmission, plus return postage. Nothing is more discouraging to these chaps—the O.M.'s of the future—than to have their reports ignored, especially when a stamp is enclosed, so please QSL.

For further information re club activities, etc., write to the Secretary at 102 McKean street, North Fitzroy, N7.

VK3 SECTION NOTES

Key Section

(Conducted by L. T. Powers, VK3PS.)

With the end of June another year closes for our Institute, as it does for a great many organisations. We look back over our finances and activities for the past year, and our shortcomings loom up very largely. But let us only think of the past with a view to formulating a policy for the future. Radio is a science where progress is an essential. During the past year we have seen a great deal of progress. Our Institute has increased its membership in a very satisfactory manner. "Amateur Radio" has started off on a career that we hope will be long and prosperous, but we must not sit back and say, "This is better, we are going ahead." Every member should do his bit to make our progress even more pronounced, even if he only introduces one new member to the happy family or mentions that he saw an ad. in "Amateur Radio" when he is buying some gear.

By the time this appears in print a new chairman and secretary will be in office, and it is up to you fellows generally to support them. Come forward with suggestions for improving our meetings. If you know anyone who can arrange a visit to A.W.A. installations or some other place of interest let your secretary know, and he will see about arranging for a visit for the gang.

The past year has produced great technical improvements,. New tubes and new types of gear have made possible circuits and performance previously considered as out of the question. The ham is a born experimenter, and everyone at some time or other produces some new idea or gets some very fb results from a new hook-up. In such cases don't forget that an article on the subject will aways be welcomed by the magazine staff or a talk on it will be most interesting and welcome at a section meeting.

Touching on the lighter side of radio, I received a note from a true ham living in one of our northern towns. He has not as yet sat for a ticket, but is a constant listener on 80 and 40 mx. His contribution to these notes shows what can be heard over the air. I pass it on in his own words:—Hrd sum fb fone on 80 mx Friday nite. Voice of well-known ham—"Stand by, om, a YL hr wants to speak to you." YL's voice—"Is that 3**? 1 YW hr, one young woman you know" (nervous little laugh). "I can scarcely believe that you really love me." This message was not intended for me, but I can't help wondering what 3** has been saying!

And following this we see in QST that W1HUG worked W9PET. What is radio coming to?

This is the last time that I will be compiling the Key Section Notes (3KR will be glad of that, as he says I am always dragging up his past). I hope the gang gets a better spin from my successor in the way of news than I have given. Having been on the air only once or twice since Xmas I have lost touch with what is doing, and have not been able to supply any news on conditions, activities, etc.

In conclusion, I would ask you to let your new secretary know any news you hear that will be of interest in the notes, and so assist him in giving us all some interesting dope.

Cheerio, es vy 73 de.

THORBURN POWERS, VK3PS.

VK3 Phone Notes

At the phone meeting held on Tuesday, May 29, the Secretary was instructed to send a letter to 3CY, Mr. Arthur Burman, expressing the section's wishes that he would make a very speedy recovery. Due to unforeseen circumstances this work and many other jobs had to be let go by yours truly. However, Arthur, you will without doubt receive your copy of "Amateur Radio," and see that we have not forgotten you, and the message will duly arrive.

At the May meeting also the boys were asked to be ready to make their nominations for office-bearers at the June meeting and as these notes are creating a record this month for being late I can say that nominations were duly received at the June meeting, and every "job" in the section seems to be quite well contested.

We were honoured at this meeting of 29th May by a visitor from VK2 in the form of 2JX. JX was welcomed and "chipped" in the usual way about his wonderful V.I.S., but he informed us that he thought the key section meeting would really be more in his line.

And now the competition for VK3 phone gang is about to commence, and below will be found the schedules for the elimination tests:—

July 8:—

3DH will operate from 10.30 p.m. to 10.50 p.m.
3YF will operate from 10.50 p.m. to 11.10 p.m.
3JB will operate from 11.10 p.m. to 11.30 p.m.
3FY will operate from 11.30 p.m. to 11.50 p.m.
3LU will operate from 11.50 p.m. to 12.10 p.m.
3SB will operate from 12.10 p.m. to 12.30 p.m.

July 15:—The following stations in the order mentioned, times corresponding with the first list:—3RI, 3JR, 3HK, 3CB, 3BY, 3LN.

July 22:—3WF, 3TM, 3HF, 3OV, 3BT, 3PA.

July 29:—3ZO, 3KE. 3XL, 3BH, 3GK, 3YJ.

Country stations are 3GZ, 3BW, 3KW, 3BG, in that order and I understand that entries have been received from the gentlemen at Birchip, 3WE, 3LH and 3CH.

Some Notes from Radio Papers of 1922 Vintage.

"If your set screams at you, or relapses into utter silence when your hands approach the knobs, you can be pretty sure that some, at least, of the valves are oscillating badly."—Oh, yeah!

"Beginners are puzzled sometimes over the rather critical tuning that is needed on very short wavelengths. The reason is that when we get down to, say, 300 meters the smallest movement of the condenser knob makes a very big difference in the frequency."—What about 5 mx?

". . . I spent the last two hours of Saturday night and the first two hours of Sunday morning listening for short wavelength signals from America. We logged five amateurs sending c.w., and once caught a faint sound of speech. Just as our hopes ran high a flood of asthmatics drowned the words."—Asthmatics?!

Sydney hams wishing to meet an American ham are advised to visit the Matson liner Mariposa next time it docks, and inquire for "Pooch" Warren (ex W6AB), who is third electrician on the liner. "Pooch" will welcome your visit, VK2's.—Bers, 195 (Moonta, S.A.).

COUNTRY NOTES

NORTHERN DISTRICT NOTES.

3WE.

Conditions generally have been particularly patchy during the last few weeks, and, with the exception of the usual Sunday morning skeds (and they, too, have been spasmodic) little has been done. With the exception of 3WE, the Birchip gang have been QRL, although 3CH did come on once or twice, using self-excited on 80 mx, using the DC mains. 3LH is still rebuilding, but is very busy with service work, thanks to the tests. 3PY is also QRL on 80 mx for the same reason, but finds time, along with 3WE and 3GW, to entertain the BCL's on 200 mx. 3GW recently acquired 3CH's old Airforce genny (has a note like the Southern Cross), but has not got it going yet. Most active VK3's worked here were 3ZL, 3DW, 3CE, 3GW and 3WN, but 3HL, 3KR, 3HK, 3YJ and others heard several times. VK2 seems very active on 80 mx—2UO, 2HU, 2FI, 2XU, 2DF, 2TH, TQA, 2RS and 2WH being most consistent. 5MD, 5WJ, 5PK, 5LR are still going strong. 5QR was heard only once, and 7CK and 7JW were heard twice. ZL's very active, the QRO gang being heard nightly working fone with W's, the latter going up to Q5R6 here on RE, det es one audio. We welcome to the gang 3WN, of Sea Lake, chief op. being Jack Lambert, who, as mentioned last month, recently got his ticket. The present perk is a L.C. Hartley, and local D.C. mains. Telefunken king, 3ZL, like others, is talking of rebuilding, and thinks that suppressor grid modulation might be as good as Telefunken. The Sunraysia duo, 3AN and 3CG, have not been heard lately. We are pleased to learn that our old cobber, 3OR, has recovered, and is again pounding brass. 3WE is feeling very sore, owing to premature demise of brand new TC04/10 due to damage in railways, package not being labelled fragile.

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

The Executive of the A.R.A. would like to take this opportunity of capitalising the publicity to be secured per medium of "Amateur Radio" by appealing to all VK2 hams and especially members of the A.R.A. to rally to the support of this ham journal. We feel that, although in the past the VK2's have every reason to be proud of the support accorded to date, still at the same time there is no doubt that there are quite a number who could, by sending in their subs regularly and consistently, add a further quota of "push" to this commendable cause.

Even at the risk of "starting something" in the nature of a fight, or at the least securing a few "nibbles," the VK2 hams can, with every justification, claim to be the most solidly organised body throughout the Commonwealth, so in view of this it would indeed be disappointing to find this State taking second place to any of the others in the measure of their support and enthusiasm for their ham paper.

At the present moment N.S.W. is, we understand, taking the second largest number of issues per month, thus giving pride of place in this connection (and in this connection only, Hi!) to VK3. Therefore, VK2's, for the "love of Mike," don't allow this state of affairs to continue. Your Executive is making every effort to bring our sales to a figure in excess of those obtained by VK3, hence this earnest appeal for support.

Subscriptions at the rate of sixpence per month, or 6/ per annum, post free, to any address within the State, should be sent to the Secretary of A.R.A., Wembley House, 841 George street, Sydney. Also bear in mind that **we badly want technical articles**, and these will be very much appreciated if sent in to the same address.

F. M. GOYEN, President.
ROBERT H. W. POWER, Secretary.

MONTHLY MEETING OF A.R.A.

Held 21/6/34.

The usual monthly meeting of the A.R.A. was held at the Y.M.C.A. The minutes of the previous meeting were not read, as it coincided with the dinner, and no ham present was responsible for his action. Hi!

A letter from Federal headquarters was read concerning W.A.C., and the members were very pleased to know the matter had been finalised.

VK2FZ's second op. was welcomed and the Temora gang's congratulations were passed on to the assembled company.

Two new members were then elected to the Committee, VK2CS and VK2DR being the successful ones. This was necessary owing to the resignations of 2XY, and our worthy technical officer, 2JX. The former is going away and 2JX is now associated with the garden city—Melbourne?

After the general business was over, 2LZ and 2ZH held the floor, discussing very ably, single signal supers, which was much appreciated by everyone.

VK2MY expressed his disagreement with QRZ's version of his note "QRZ" describes it as RAC, and the worst of the month. As Mac is always on XTAL, possibly it was someone's bad reading or sending. Here's a suggestion "QRZ": give the date when you hear these power leaks, and the gang can see if they were on at that time.

A HAM ABROAD.

"A.R." Special.

(From A.R.A.'s Special Correspondent, VK2NR.)

The first notes from our correspondent while travelling around the coast of Australia were too sad to publish, but out of them we were able to gather he had a wonderful time at each Australian capital; but, alas, lost the wonderful dinners and suppers soon after. (Curtain.)

Our next note is from Colombo.

"As we entered the artificial harbour of this busy port, heavy rain fell, making the prospect of examining the place in one day rather poor However, the rain cleared away, and, for Colombo, the day proved very cool.

I had written to VS7GJ, the BERU representative for Southern India, and, although he lives about thirty miles away, he was able to get into Colombo and give me a splendid time, making me feel once again what a splendid body of chaps the hams are.

There are no active hams in Colombo, and generally those who are active in Ceylon must supply their own power from lighting plants and wait months for even the smallest portion of gear, which must arrive from England.

The men here find it difficult to be on the air often, owing to the multiplicity (good word for a CW man) of duties, that we living in Australian cities could not understand.

Unfortunately, I could not go out to see VS7GJ's station, but I looked over the local B.C. station. The high humidity in Ceylon

causes sets that are satisfactory in other countries to break down rapidly.

There is an active club in Ceylon, but it appears to be more in the nature of a S.W. BCL club than a ham gathering.

VS7GJ gave me the national dish of curry and rice, and about nine other ingredients, for lunch, and I haven't recovered yet."—2NR.

ZONE 2 NOTES.
(Z.O.—VK2HV.)

Andy, of 2NA, should be on very shortly with a SE rig, obtaining power from a small genny. He is P.M. at Delungra, that city (?) being devoid of hams.

2ZP, the once busy northern station, has been QRT for some months, as QRL in the garage business, also YL's versus CQ's. 2HV has been QSO, ZL, VK2, 3, 4 and 5 on the 7 mc. fone during the last couple of weeks, with a 250 heising modulating a 210 in a T.N.T. about 5 watts output. 2HV has a special antenna system. Three bends and three slopes—low, medium, and high angle radiation all combined.

Ivan 3EG, late 2EG, sure raises the dx. with that xtal dc. (?) sig. 2KR is still going strong with a 201A in a Hartley and uses heising modulation for telephony, with an input of generally 3 watts, with a SW feed antenna. He is now on 227 metres on Sunday from 8 p.m. to 10 a.m., and gets out very well, and is showered with reports from all over the countryside from 75 to 100 miles radius. 2CR hasn't been very active of late, but is rebuilding, and will be on shortly. Jack, his second op., has now obtained his ticket, and will be on fone shortly. 2LM is on occasionally, but seems exceedingly QRL business. 2XQ, the old John, has shifted his QRA from Quirindl to Maitland. 2KN hopes to be on shortly and allows in his rebuilding for QRO. 2NM is heard consistently on 80 mx., and a newcomer, 2RV, hopes to be busting the ether in a month or so.

ZONE 5 NOTES.
Jottings from the Mountains.

During the past month or six weeks the 20-metre band has shown a decided tendency towards improvement. As early as 9 a.m. Yanks can be heard weakly, gradually coming up in strength until about 1 p.m, when they are at their best. Many oversea fone stations are as loud as R7 on the speaker at times, which can be held until about 5 p m., when dx. fades out. 40 metres has been patchy of late, with occasional periods of wonderaful dx. conditions. 80 metres is behaving rather well, except for a night or two of QRN. A number of Yanks have already been contacted on this band, usually between 6 and 7 p.m., fairly good reports being given each end. Last year fone was put over the Pacific on two occasions, and it will be interesting to note if this will be done again at this station.

VK2RJ and 2NS went flying through here a few weeks ago, the day before the A.R.A. dinner. They did not know the beanfeast was on, otherwise we may have had them with us. 2RJ is temporarily off the air owing to a broken down genny, but it will not be long before that powerful sig. of 2RJ's is making us sit up and take notice. 2RJ now has a national FB XA receiver, which he says "cannot be beaten."

2NS is not heard much lately—QRL or QYL? 2DR puts out some heavily modulated fone on 80, and it is good to listen to. They say Don is breaking in Floggo as second op. 2YX never seems to be satisfied with 100 per cent. quality. Bill has a wonderful selection of mikes. Heard old Bill, of 2HZ, calling CQ on fone from 2LZ on 20 metres one afternoon. 2XU is another who puts out another nice sig. on 20 metres. 2FI sure makes a row with his fone and CW. Athol is thinking out a scheme to start his motor these cold mornings. 2BP still works a bit of dx. on all bands, but is far from satisfied with the QRM which comes from the rig when using SE oscillator. A scheme has been worked out to combine the tri-tet with an electron coupled oscillator. It looks FB on paper and will be put into operation in the very near future.

ZONE 6 NOTES.
(Z.O.—2QA).

Most of the members of this zone have concentrated on 80 for the winter; conditions are very patchy, skip being very noticeable after about 7 p.m. The ZL's come in very well about sundown, but after that they also fade down.

2NM, Mudgee, in accordance with his usual practice, has again rebuilt. This time he has 47, 46, PP46's, and PP10's, modulated by 4, UX250 tubes in p.p. parallel. The outfit is built rack and panel, aluminium bases and panel, with a profusion of Ferranti meters scattered about the front panel; in spite of all Harry can do, the fone is still good. 2WH, of Forbes, has installed remote control on his outfit. Moved the receiver and the mike along with the starting switch, into the lounge, so that he can sit by the fire these cold nights. Seems to have struck trouble with the modulator, acting as an oscillator, also QRM from test matches. 2LM is rebuilding a 40 metres rig. Also intends trying suppressor grid modulation in the near future. Seems to have the home-made a.c. power supply going fb. now. 2RJ, the old hermit who lives in the bark humpy out Mandurama way, seems to be having a lot of trouble with that haywire outfit of his. Just got things going nicely, a nice new, shiny 75 watter 100 per cent. modulated by a 150 watter. Says "it looks like a UV199, only bigger" nice new a.c. speech amplifier confiscated from 2NS, the old motor-generator rewound, delivering a miserable 2,00 volts, nice matched impedance aerial coupler a la Collins. Everything going fb, was even thinking of installing a set of mirrors so that the meters could be read from the operating position. Evidently the strain was too great on the motor-genny, and it QRT, so the old man is off for a couple more months while someone tries to rewind the genny again. Expects to come on with a brand new comet Pro. FBX receiver. 2NS seems to have abandoned ham radio indefinitely. 2BC has had his call sign confiscated. But why let a perfectly good call sign waste? 2RS has been putting out some very fb fone, alas the wind refused to blow, and Rob's power plant was appropriated to pump water. 2QA rebuilt, now using 47, 46 and 45 modulated heising fashion by a 250, also using the "universal antenna coupler," had some trouble getting the works to mote. Investigation proved that we were using a typical example of the class Z amplifier. The grid of the final stage was tuned to 80, but the plate was tuned to 60. The aerial then being tuned to 80, the business got out all right. Wonder what the harmonic was like on 60 metres. Once again I appeal, if ayone in Zone 6 has any dope, send it along to Jack (2QA).

ZONE 7 NOTES.
(Z.O.—2FI.)

On 80 metres during the past month conditions have only been fair, and this band has not yet reached the standard that it was this time last year. At night, most of the local

and Interstate fone stations suffer from acute QSB. 2QA and 2FI have decided that 160 metres is a better proposition and hope to explore that region soon.

2JQ has been busy rebuilding, and is incorporating link coupling in the new outfit. Was heard testing fone on 80 metres lately. 2GT has now transferred his gear to Batlow, and should be going strong from the new QRA soon. 2PN on 80 metres once in a while, just to keep the spiders busy rebuilding cobwebs. 2UO active on 80 metres. Bob Smith, the op., is reported to be an authority on YLs. The op. behind 2YW is Doug., ex 2nd op. of 2UO; puts out fone from a MOPA machine, using 45's PP osc. and 46's PP PA.

There are now six hams in Wagga, although 2TZ and 2RH are inactive owing to boarding-house complex inductively coupled to chronic Yl'itis. 2TH been working DX on 40 when he is not making his head ache with the speech amp. or class B modulators. 2XF making inquiries about generators; he must be going hush again. 2FT spends most of his time trying to make fone go on 80 metres. 2WH has installed remote control and now operates with his feet in the sitting room fire.

It is still possible to tune in 2LB grinding away on 200 metres; it must get pretty stale, Allan.

ZONE 8 NOTES.
(Z.O.—2OJ.)

The old gang is sure making good use of better conditions on 80 mx. and chewing the rag plenty. VKs 2SL, WS, fones B8 and 2KR with 3½ watts B6, ZLIFI and ZL2BE fones B7. Unusual conditions one morning about 11.15 on 40 mc., when QSO VK3EM, whose sigs. went from B8 to R2 and did not recover. Sigs. also faded in same proportion at EM

VK2QD's electron coupled receiver is nearing completion. Looks an fb. job. Both 2YI and 2QD QRT until their new transmitters are finished. 3-stage xtal and MOPA respectively. Must be a contest near. The next door BC set responds very FB to clix, they say, hence mostly QSK with SE pending shock absorbers. VK2OC heard with well modulated fone on 40 mc. at R6-7.

VK3EG been to VIS again, and spent a few hours here again on his way through.

Conditions for DX. on 40 mx. poor at night. W's are having a run of bad QRN.

NORTH SHORE ZONE.
(Z.O.—VK2DR.)

The month has been uneventful as far as condx. are concerned. 40 Mx. is settling down to usual winter condx. and 80 is warming up under the influence of R.C.C. hams and others.

The usual Ws and VEs can be heard at good strength in the early evenings, but fade out entirely after about 7 p.m. As usual, condx. liven up again after 11 p m., and until the wee sma' hours (so the reports go; I certainly haven't been sitting up in the cold shack at these times). Have no dope on early morning condx. Burr-r! Who's out of bed, anyway? 80 mx. isn't as lively as last year, but winter is only a chicken. Plenty of time to warm (?) up yet!

Had a very interesting yarn with 2TH at Wagga. Roy was complaining about the temperature of his shack, so we suggested that he should obtain a kerosene room warmer and sit on it. Roy said the idea was good, but stipulated that an asbestos sheet be inserted between the top of the warmer and his frame. Hi!

Now for the dope. 2FM has been on 40 consistently with xtal note calling DX. 2AG has 4-stage xtal rig, using 47 CO. and 46s. 2AG has reverted from tri-tet 59 to 47 CO. 2AH isn't satisfied with his fb. s.s. super, and is building the one featured in "Frisco Radio." It will be some job, believe me. 2DY has five band exciter unit, driving tens, which are doing their best to drive a couple of big tubes in the final. 2GW recently showed 2AE his 1925 model 10, which, with a 46 doubler, drives a 1925 model RV218. 2GW sent a pwr. tranny west. 2JY is on 20 with five band exciter unit and a rank note. 2PV blew a thermo-couple ammeter. Hard luck, Peter. 2PV rocks in locally, but has difficulty in working DX. owing to poor location of antenna. 2VQ has started up near 2VG with 45s in p.p. and ½-wave zepp. Welcome, OM, and please let me have your news. 2VQ is having trouble with a low type of pirate. Dave, of 2AE, is building xtal tri-tet with 46s in PA. Link coupled. Dave worked J5CC with 15 watts on a 45. Just heard that there is a new ham at Gordon who hasn't received his call yet More of him next month. 2BJ has joined our very select zone. Hope you rally round with some dope, Keith OM. Well, old Con (2LZ) is back at it again, having satisfied the R.I. re BCL complaints, and is trouncing 20 mx. on phone in the afternoons, working Ws and Europeans. Con's S.S. super is perking nicely. 2DU is still very QRL business. Dud is ordering still more meters and sa, you should see his collection now. Heard that 2HG is still working DX. late at night on 40. 2HY has erected a new aerial running north-west/south-east, with the result that the first eleven QSO's were 8 Ws, 2VEs and one VS2, whereas Roy could only get Europeans on the old skywire. 2HY has changed over to link coupling, with fb. improvement in efficiency. Roy, of 2HO, was at the A.R.A. annual dinner, cutting down the overload of his plate. 2JU has been heard on fone a bit. 2JV is brushing the cobwebs off his gear in preparation for the annual Uni. chess match. 2KA is also helping with the chess, having finished his rebuilding.

Haven't heard from 2VG this month. Did the A.R.A. banquet get you down, Rex? Andy, of 2VR, has put his 46s up on the shelf, as they've refused to mote. 2XC has been on 40 with T9 sig. QSO W's. Ditto 2XG. 2QO has been on 40, working VKs. Very sorry to hear that 2NE has lost his ticket owing to BCL QRM. Hard luck, OM. The R.I. is still causing chaos amongst the pirates, and good luck to him. 2QR is down with chickenpox, which accounts for lack of notes from that quarter. 2QR has recently made WAC. 2YA is QYL, but is coming on again with tri-tet xtal and E.C.2 Rx. 2ND (now 4ND and B.C. stn 4AY) is going to string a full wave 40 mx. vertical zepp from his B.C. station aerial mast (150 ft. high). Sa, you VK4 chaps, keep a look-out for 4ND. You will find him an fb. chap and keen for a good yarn. Norm. gave me 350 volts' worth of fb. B batteries when he left for VK4, so battery bias is the order of the day with me. 2BA is still trotting around the islands on a steamer and gets on the air every month or so, when the boat is in port. 2DA keeps regular skeds with a VE5 on 40. 2EL is going to ZL, probably permanently. VP1AM (Ocean Island) is on the air and is getting plenty of QSOs. Y' could have knocked Jim (2YC) over with a catswhisker when VP1AM answered his call. Believe Jim was using power which would make a fly guffaw. 2YC is using tri-tet on 40 mx., but what with the son and heir cutting his teeth and one thing and another Jim doesn't get over-much time for ham radio.

VK5 (SOUTH AUST.)

The June general meeting held at the club rooms on Wednesday, June 13, took the form of a social. There was a good attendance, and after the essential business had been disposed of members were treated to a light supper with suitable refreshments.

40 metres still continues to be popular; the DX still being there, although it is hard to get. Rag chews, both local and Interstate, are popular on 80 metres. Now that the QRN has dropped on this band many of the W fones are being heard at quite good strength.

20 metres has been excellent in the afternoons. Several of the local chaps, including 5HG, 5KL, 5JH and 5MK, have been taking advantage of the good conditions.

The single sig. craze still has a hold on the local chaps. 5MY has started one. 5WP has been QRL lately with institute work, and has not had time to get his super copper shielded s.s. perking properly yet. 5RT's new super seems to be a champion. Bob is enthusiastic about the xtal filter in the job. Says that it cuts down the noise level wonderfully, as well as bringing up the signal level.

5WR and 5UK have been heard lately working break in. More of this should be heard on the air. It is not hard to do, and any ham who aims at a modern and efficient station should be able to work it. 5QR is heard in the city occasionally on 80 m.

"Who's afraid of the Big, Bad Wolf?" Listen in on 40 m., and 5NR will tell you. Bill puts out a fone on that band that is really worth listening to.

5MY has been looking worried recently, because another chap in the same street has just got his A.O.P.C. 5FM has a nice fone on 80 m, but has been experiencing some curious effects from it. The fone is being heard on the broadcast band at quite long distances from the xmtr. 5WI was on show at a recent exhibition in Adelaide, together with quite a lot of the gear constructed by the Technical Development Section.

5FG has been experiencing trouble with key clicks, and has to QRT during broadcast hours until the clicks are fixed. 5GK was heard recently with a f.b. T9 note on 40 m. 5LB has been practising on a bug.

Royal Australian Air Force work still keeps 5SU busy. 5CR, a QRP station, is inconsistent, being heard sometimes with a P.D.C. note, and at others with a rotten R.A.C. note that blots out half the band at this location.

5LN hopes to be on soon with a 59 tritet oscillator and E406 or 210 p.a. Fone will probably be used on 40. 5RF is contenting himself with local rag chews on 40 m., instead of chasing the DX. 5JH wants to revive the old R.C.C. Other starters please get in touch with 5JH.

5ML has joined the navy, so won't be able to entertain the BCL's with his 200 m. transmissions any more. Guess you will soon be having a YL in every port. 5MB's QRA is now Crystal Brook, where he is engineer in charge of the new 6 k.w. 5PI transmitter that relays 5AD's programmes. 5MD has been on quite a lot with a f.b. T9 note from a 3 stage xtal rig. The note is certainly a credit to the station. Rumour has it that 5LD is going to build a xtal rig.

5MZ is a consistent DX getter. Although only a comparatively new ham on the air, MZ has a record that some of the older hams would be proud of. Was recently QSO with an OA. 5HW has given up 20 m., but hopes to have a fly at 80 m. before the winter ends. 5BR puts out some f.b. 80 m. fone from their new QRA, Montpelier street, Parkside, the old home of 5DN. 5HB is often heard on fone on 40 m., but the op. is not so good on the key.

5DT is a new call on the air. It belongs to J. Marr, of Alice Springs, Central Australia. 5DT, who was formerly a VK3, would be pleased to QSO the local boys. 5MK and 5JH can be heard almost every day chewing the rag. 5JH recently had quite a lot of fun putting up a new mast.

5TX, VK5's QRP king, still makes his three watts heard on the air. Has no trouble in working all VK with this huge power. Rig is a mopa, using receiving tubes.

5LG is QRL, with YL's again. Power leaks and hay wire perks also help to keep this station off the air quite a lot. The 3 stage xtal rig has been playing tricks. Note is practically O.K., but Leith has had a lot of trouble trying to cut out the back wave. 5SR has been heard on the air several times lately with a note that sounds like a cross-cut saw feeling crook. Wonder if the club has any monitors? 5XK has not been heard for some time. Says DX is bad. Cheerio,

ERIC HALLIDAY.

VK6 (WEST AUST.)

On June 7 the usual monthly shack meeting was held at headquarters, with a good mustes of members. Those present included 6AG, RL, JK, NJ, PK, KR, CX and CP. General ham discussions were the order of the night, hams comparing hook-ups and modulation systems as used at their various shacks. A movement was mooted, whereby funds might be raised to install testing gear, such as an oscillograph, in the shack. The matter was purely open discussion, and probably the new council will prepare plans for the object in view.

The Vic. Park boys are very consistent in attending these meetings, and headed by PK have always some interesting dope to bring forth. I would like to mention here that those members who treat their division in a matter of course manner would do much better if they were more regular in attendance at these gatherings.

The knowledge gained by general discussion of amateur doings would surprise these hams, and I venture to say put them on the right track to some of their problems which they spend many sleepless nights trying to fathom out. "Nuff sed." The meeting concluded at 10 p.m.

General Notes.

With the wintry conditions now existing in VIP all the ham bands have become patchy. Severe rain and electrical storms have made conditions so bad that only the most hardened hams have been wasting any time.

On the 20 MX arena some good DX exists during daylight, but the gang here have never cottoned on to this band at all. Spare moments spent by the Ed. listening on 20 MX have failed to hear a VK6. On the 40 MX during the past month the same conditions exist in regard to VK6s.

This band on some nights has been a hive of Ws, and in the later hours Japs. and AUs have been heard, at good QSA 5.

The 80 MX seems to be VK6's paradise just now, and some really good phone can be heard coming from 6SA, MN, SR, HD, RW and CP.

On the key are CY, HW, RS. On one recent evening I heard three KAs and six Ws on this band, but failed to push my sigs. into their cans. Taking this band on the whole, the con-

ditions are in no way comparable with those existing last year, when a short CQ would bring back all the ZLs in that land. The only ZL beard with any degree of comfort is ZL2CP.

Jottings.

6LJ, after rebuilding and getting out a FB xtal sig., has suddenly gone nesting again, but still finds time to keep the QSL service in order.

6KB again shifted his QRA, but is going to have a job to swing his sky wire.

6FT and 6LK have taken up the serious side of radio, and are now in charge of B class 6AM at Northam. Good luck. By the way, this FB station has just been completed by the daddy of VIP hams, 6AG.

6PK keeps the Vic. Park boys swotting curves and K/cs, and sometimes puts out a hefty sig. on 40 MX late at nights.

6BB has taken another trip to the Eastern States to hunt for bargains. BB has a house full of gear, and can always supply a decent portable rig for stunts.

A recent stunt was the timing of the Light Car Club's tests at Greenmount. BB, SA and JS were the experts, and carried out a very successful day's work. On the way home BB and SA paid a visit to CP, and after examining the junk heap at this station went their way pondering how some hams get sigs. out at all. BB put the meter over the pack, and expressed the opinion that the regulation was not bad, which might mean anything!

SR has now got some fair fone on 80 MX, but has very little time to work it.

MN also heard on 80, with some class fone.

RW is the most consistent fone station going at present, and puts out some good stuff if the local power supply is O.K. He is modulating a pair of E406 amplifiers with genuine B class, and is the only ham here that I have heard to get B class going anyway decent.

Not heard much of late are FO and BO, also NO. 6NO threatens to start up again soon, but so far I have failed to locate him.

6DA has given over the control of 6WF for a period, and is now closer to the city, but has only been heard once.

6CY and HW, the Fremantle boys, are fairly consistent brass pounders on 80.

6AC, the most unlucky ham in this State, does not look like ever being able to get on the air.

6FL, late of Geraldton, but now at Albany, is studying up Centenary contest rules, and getting all O.K. for the big stunt. Sa, o.m., can you stir up the Albany gang, also show them our "Mag.,"—Ed.

6FM, of Wiluna, sticks to 40 MX and daylight QSOs with some of the city gang.

6RL moving his QRA, and hopes to be perking again very soon.

6CR or 6MU never heard lately.

Quite a few of our locals are now salesmen, and the time taken up at nights demonstrating the mystery of broadcast reception to prospective buyers takes up all their spare time.

6KO still putting out FB fone on 80, and threatens to do some DX on 20 MX.

Since writing above notes a very solid fone QSO took place on Sunday, 10th, between 6MN and CP, both on 20 MX. MN's fone was a revelation, while CP's was decent, and when he gets his aerial O.K. it should be the goods.

It is with deep regret we learn of the death of 3DH's mother. To Ivor Morgan all hams desire to convey their deepest sympathy in his sad bereavement.

BRITISH NOTES

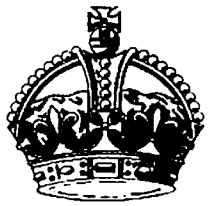
By G6CL via E.L.S.

We have pleasure in announcing that a special certificate will be awarded to the overseas portable station giving the largest number of points to British portable stations taking part in our second annual national field day event. The event will commence at 1600 GMT, June 9, and will conclude at 1900 GMT, June 10. Over thirty British stations will be in operation, half on 1.7 and 3.5 MC and the remainder on 7 and 14 MC. N.F.D. stations will call test NFD. Claims for the special certificate much reach R.S.G.B. headquarters by June 30, 1934, and may be sent via VK3WL E.L. station. British stations will use a maximum power of ten watts on 1.7MC, and 25 watts on the other three bands. Already advices have been received to the effect that the Egyptian BERU group and he USKA (Switzerland) will be operating portables during this event, and it is hoped that their example will be followed by other organisations and individuals abroad. We shall be pleased to publish lists of the portable calls of such stations if received in London promptly.

The June issue of the T and R Bulletin will mark an important milestone in the history of the RSGB. On July 5, 1913, the Wireless Club of London was formed; it was from this small local club that the present RSGB sprang. It is our intention to celebrate our coming of age in an appropriate manner. The June bulletin will, therefore, contain contributions from many of the early pioneer amateurs in this country, and will, it is hoped, do much to illustrate the enormous strides which the society has made in recent years. A copy of this special issue will be sent free to all interested non-members.

An important step was taken in April, when the society's new research and experimental section was launched. This section supersedes the contact bureau, and, as the name implies, is directed towards the encouragement of research work. Groups have been formed to investigate transmitter, receiver, valve and aerial design, whilst the more general subjects such as 1.7, 3.5, 28 and 56 MC work are fully covered. A contemporary literature group has also been formed as well as groups to study television and atmospherics and fading problems. Co-operation with overseas societies will be welcome.

R.A.A.F. Wireless Reserve Notes



VMB

Total No. of Messages 191

Average per Station 27.3

VMC4

Total No. of Messages 149

Average per Station 29.8

2B5 : 4B1

Total No. of Messages each 48

SECOND DISTRICT.
(2ZI.—VK2BP.)

This month sees another section in operation under the leadership of 2D1 (VK2YK). The increase in membership for the period is four, which brings up the total to 24. Many of the stations are showing vast improvements in their operating procedure, and it should not be long before they will be able to compete favourably with our rivals in VMC.

There has only been one resignation to record since the reserve's inception in VMB, and that is VK2FZ, whose business activities were too pressing. Others who have asked for their training to be deferred are 2A4, 2B1 and 2C2. The most active members still appear to be 2B2 and 2B5. It was by their efforts last month that VMB2 carried off the award for the highest section returns in VMA, and 2B5 is to be congratulated for his high total, which gained for him the "star."

Watches are still being held on the 80 metres amateur band, and reception conditions appear to be very favourable, as the signals from 2ZI transmitter are nearly always reported R7 to R9, both during the daylight and night watches from all parts of the State.

2A3 has been keeping Sunday watches, using a low-powered portable transmitter.

2BI has been ill as a result of war injuries, but is reported to be improving.

2A2 shifted his address to the Newcastle district, and is back on the air again with his inimitable T9 sigs.

2A6 and 2Z1 are still recovering from the effects of the A.R.A. dinner held on May 17.

2B2 intends altering his power supply. He is always R9 here now. What may we expect in the future?

2B5 never goes to bed while there is a chance of handling traffic.

2C3 is going to buy a "mill" instead of another 211.

2C4 pushes out a very nice sig. from his low power rig.

2DI another low-powered merchant with a wallop.

2D3 goes to the other extreme, and normally uses about 250 watts input. He lives in the centre of a dozen or so high-powered commercial stations, and talks about "X9."

2D5 also has a quarter kw. outfit at his disposal.

2ZI never likes to talk about his power input, neither do the tubes in the transmitter.

Traffic.

VMB1.—None reported.

VMB2.—2B1 5, 2B2 39, 2B5 48, 2B6 17; total, 109.

VMB3.—2C1 35, 2C3 42, 2C4 5; total, 82.

VMB total, 191.

VMB2 average equals 22.25.

VMB3 average equals 27.33.

THIRD DISTRICT NOTES.
(3Z1—VK3UK).

Every June V.M.C. stages its annual relay contest. Each station originates thirty messages and relays as many as possible. Points are allotted on the basis of two for a relay, one for each originated message, and one for each message on hand at the end of the contest. Unfortunately, this June has proved an extraordinarily busy one, with the Fisk trophy contest and test cricket, as well as each member's usual round of activities, and, as a result, only a comparatively few stations were able to participate actively throughout the duration of the contest. After a very exciting tussle, in which the issue was in doubt right to the end, 3A5 beat 3C5 by 451 to 446 points. These two stations are to be congratulated on their great effort, and neither could have begrudged the other the victory. Special mention must be made of 3A5 though, as he has now won the trophy twice in the last three years. It was unfortunate that conditions were too poor to enable VMG to take part, and only five messages were handled with the Tasmanian stations.

The contest, of course, caused a suspension of normal traffic working, and as a result VMC cannot contest the traffic awards this month. However, next month begins the new reserve year, the first year since we gained official status, and at the same time it is Centenary year, so we can look forward to a record-breaking twelve months. VMC's new s/c's take over on July 1, and all sections are "on their toes" to try and establish an early lead in the annual contest for crack section.

I always feel that one of the best methods of training is a co-operative one between districts. Apart from the interest point of view, it assures that unanimity of work and standard of efficiency which is so essential in an organisation such as ours. We have been fortunate enough to have been able to do two

co-operative stunts with VMB recently. Last month 3B1, 3B3, 3B5 and 3C2 carried out a very successful piece of work with a portable station at Denillquln, and the success was due in no small measure to the 100 per cent. co-operation of 2B1. At very short notice early this month we were required to get weather reports, ground conditions, etc., from three N.S.W. country towns. The enthusiasm and initiative of 2C3 was responsible for bringing this job to a successful conclusion.

FOURTH DISTRICT NOTES.

Work for the month has been on the upgrade, with the formation of sections and generally getting the sections started in training of members in procedure. The amount of traffic handled by VMD2 speaks well for that section and is a good indication for future totals.

4B3 is managing the procedure first rate and is handling traffic in fine style. 4B2 is finding trouble with his 245 oscillator tubes and fades out on 4155 kcs. after 1900 hours. 4B1 is putting out a fine signal from the "B" batteries, and is looking after VMD2 well. 4A4 contacts 4Z1 direct at present, as 4A1 has not yet taken over s/c duties. 4A2 has been unable to obtain power supply up to the present, but stands by each watch and copies each broodcast from 4Z1. 4Z2 expects to take over duties as deputy by 8/7 to relieve 4Z1 occasionally.

Traffic totals.—4B1, 48; 4B3, 18; 4Z1, 18; 4B2, 7; 4A4, 6.

FIFTH DISTRICT NOTES.

5Z1 (5SU).

Reserve work has been going along quietly during the last month, and broadcasts have been given as usual on Sunday mornings.

5A1 wishes to inform members of the first section that he has Inaugurated a mid-week watch. He will call VME1 stations at 2300 each Thursday on 3555 kcs.

It is hoped that all first section members will attend this watch, as it is essential that we be able to rely on an efficiently organised night watch.

5A2 called in to see 5Z1 and 5A1 while down from Alice Springs, and as he now has two other amateurs with him in the far north we can look forward to some more country members soon.

VMF has not been heard on 4155 kc.

SEVENTH DISTRICT NOTES.

(7ZI.—VK7RC.)

There is nothing startling to report this month. All members have been handling a little traffic.

An invitation was received from 3Z1 to join with VMC in their annual relay contest, for which I would like to thank them, on behalf of the VMG members. 7A1 appears to have speech amplifiers "on the brain," and could not find time to start in the contest. 7A3 could not start either, because his mother is ill, and 7A2 was rebuilding, so that leaves only 7Z1 to uphold VMG's honour. 7Z1 was only on the air for one night during the contest, and that night all VMC signals had disappeared entirely, so that all told 7ZI sent only five messages. These were sent to 3C4 late one night. I would have very much liked to have entered into this contest with more time at my disposal, but this was impossible. However, better luck next time.

7ZI and 7A1 are out of stock of message forms, and have been waiting for further supplies to come to hand.

LATE NEWS

WESTERN DISTRICT NOTES (3HG-3BW).

With the approaching winter months conditions on 80 and 40 meters have grown steadily worse, although DX can be worked on 20. 40 metres is now practically useless, and 80 is very little better. An hour or so after dark fading sets in, and the band becomes dead. However, this may be due to the colder weather keeping the boys by the fireside.

The third R.A.A.F. reserve contest has just concluded, only one Western District station competing, and he seems the likely winner.

3RP, of Geelong, has been staying with friends in this district, and spent an evening at 3PG, together with 3HG and party. 3BW, since his return from his Fiji trip, has been fairly active, and was elated to work a station in Jamaica. 3GQ still rather inactive, due to brisk business in the radio sales line. 3PG has been experimenting with goyder lock, and has ordered a 40-metre crystal to obtain greater 20 metre output. Norm. says his filament batteries go three months on a charge. QRP? Was glad to hear old Murray, 3OR, on the air again after his illness. But say, o.m., whence the backwave? Can hear it over half the band. Guess you had better put back the crystal and drop grid keying. 3PG and 3HG were in Mt. Gambier recently, and visited 5KR. He is doing a great radio trade there, and has little time for getting on the air. A new-comer is 3CK, in Cobden. He is using low power at present, and his signals are rather chirpy. 3HT is now stationed at Alice Springs, and using the call 5DT. Give him a call, fellows, as he says he is lonely up there!

VK4 (QUEENSLAND).

The monthly meeting of the Wireless Institute (Queensland division) was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, June 1, before a large attendance.

The resignation of the treasurer (Mr. R. Browne, 4RB), owing to business reasons, was accepted with regret, and Mr. Houston was elected to fill the position.

Official Operator 4WI.—Mr. V. Jeffs (4VJ).

Calibration Officer.—This position will now be held by 4GK, Wynnum. All meters will be calibrated free of charge, and must be of good construction.

Council.—Mr. H. Lynch (4HL) elected, owing to resignation of Mr. R. Browne (4RB).

At the conclusion of business a lecture on "Wave Propagation" was delivered by Mr. V. Kenna (4FK), and was thoroughly enjoyed by all present. Further lectures are looked forward to by this able lecturer, and members now eagerly await the next one.

All correspondence for the institute should be addressed to the secretary, Box 1524V, G.P.O., Brisbane.

Conditions in VIB are still very poor on 40 mx, but 20 mx has shown an improvement during the afternoons. W, VE, VP5, X signals are coming in at fair strength. 80 mx seems to be coming popular again, judging by the numbers heard on this band.

4ES, of Kingaray, is coming in at R7 on 80 mx, with a grid DC note. Uses B batts for high tension. 4PH can be heard sending slow morse on 40 mx for the benefit of student members every Monday and Thursday nights between 6.30 p.m. and 7 p.m., and reports of reception are required. Address, Montague road, South Brisbane.

4JB having a good time on 20 mx with his Hartley; two new countries being worked, VP5 and X. 4RV, of Cunnamulla, reports that his gear is for sale, this being due to pressure of business. Reg is unable to devote much time

to amateur radio, hence this step. The boys will miss your fb sigs, om.

4US QRL sorting out QSL cards.

4EI, Townsville, still working dx in grand style. Just received batch of African cards. Congrts on WAC om.

4UU has been having trouble with chirps. Have you tried the bird seed remedy, Bill? Ask 4US, hi.

4MC still on QRP Hartley. Has had a lot of trouble with QRM from picture show.

4UK, now of 659 Buthven street, Toowoomba, just completed a TNT for 20 mx, using a TCO4/10 with 20 watts input.

Madeline (11-year-old daughter of "Mac," 4GK) is often heard on 40 mx, with a fb fist. She can certainly raise the dx. Seems to be following in the first ops. footsteps all right.

4AW, although QRL on traffic and R.A.A.F. works, seems to find time to go driving with a yl in his Citroen flyer.

4GU putting out some very nice fone lately. Heising modulation, E424, E409 speech amp., 250 mod. We regret to record the death of Mrs. Files, mother of Jack (4JF), and all extend our deepest sympathy in your great loss.

Congratulations to Messrs. G. Harmer and W. J. Berry in securing their tickets at the recent A.O.P.C. exam.

On May 20 a successful 56 mc test was carried out by 4AW, Nundah, and 4GA, Mt. Nebo. On this occasion 4GA reports having received 56 mc telephony from 4AW at R5/7, the distance being 18 miles. The transmitter used by 4AW was a series Hartley, using 210 osc. and Heising mod. Input 20 watts. Cheerio.

73 4RY.

NOTES FROM VK2XQ,
Late of Quirindi Gang.

Noticed old 3EG's remarks about the laxity of the Quirindi gang as to notes in this mag. Just too bad, Ivan, but here goes.

Quirindi and district at present boasts three hams—2KN, 2JF and 2HC. Of these 2KN is the only one active. 2JF been QRT for years.

Old Ray has been on the sick list for few months now, and consequently qrt. Old 2HC, if I know him, would like to be on the air, but the quack says no. Anyway had short QSO with him few days ago, and was pl to hr him agn. Ur fone, Ray, stronger hr than in QDI.

2KN is putting in QRO at present, so gess he will be putting out hefty rig sn. Says he gng put 600 volts on coupla 46's in push-pull P.A. Shud be fb rd.

2XQ is at new QRA, 47 Regent street, West Maitland, after eight years in Quirindi district. Have installed junk hr, and had some fb QSO's with the gang on 40 and 80 mx. The ant. hr is only 20 ft. high, with lots of tall buildings about, also plenty BCL aerials, hi. They haven't found me yet tho, hi. Yanks come in better hr than in QDI, but haven't hrd any western DX as yet.

VK2WU, who is only 200 yards frm hr, is using QRO in a Hartley, and gets out well. Has the best rx I have hrd. It is a superhet., and is a beautiful job, both as regards appearance and performance.

Old Gus, of VK2KR, still QRP with his fone on 80 mx, and gets down hr at R8. Hopes to be QRO when the town supply is converted to A.C. next year.

Haven't hrd 2LM for ages, but hrd someone say he has busted his genny. Hpe hr you sn, lies., or please give me a yell.

VK2VO, of West Maitland, has a very nice outfit, and pushes out an fb T9. Mac. worked his first yank few days ago, fb, using 59 tri-tet on 46 buffer and 46's on push-pull PA.

Old Stan, of 2KH, is QRL work, etc., but hopes to get on sn. He says his batts are QRT.

2XQ gathered 2WU, 2NU and a BCL, and we went down to meet the Newcastle gang at their weekly meeting, and we had a most enjoyable trip. The gang down there very keen on Centenary contest, and, judging by conversation, the average input per ham will be about half a k.w., hi. Glad you chaps miss out up hr iu Maitland, hi.

Sa, Ivan, hw abt a "Back to Quirindi" Week some time, hi. Don't be mistaken, gang, as Qurrindi is one of the best lil towns in VK—Tallangatta included, hi.

Well, 73 gang and QSK.

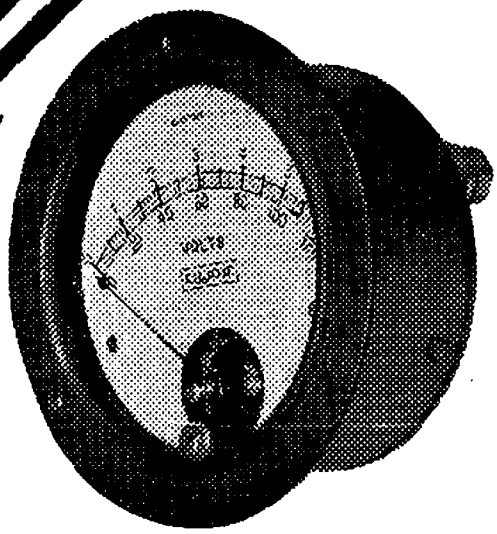
M. JOHN (VK2XQ).

ATTENTION, HAMS!

We are informed that the 5th Batt. Highland Regiment are anxious to contact suitable ham for senior operator signal section now being formed.

Applicants about 21 years, having some knowledge of construction and general short wave portable sets, etc., should write to 3WG, 2 Anthony street, Glen Iris, S.E.6.

Promotion is likely for keen man when qualified.



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AMATEUR RADIO

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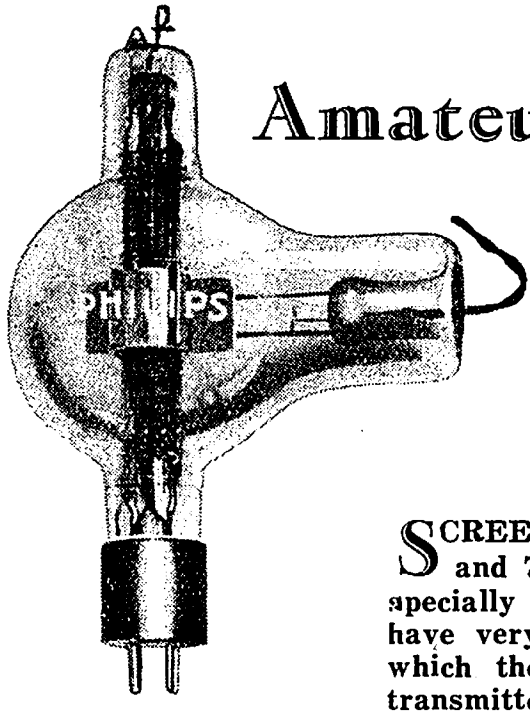
Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

Screen Grid Valves
For
Amateur Transmitters



¼ of actual size.

Types:
QB 2/75, QC 05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A.

Type.	Screen Grid Valves. QC 05/15.	QB 2/75
Filament voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam of bulb	50	100
Max. length	160	210

*Approximate values.

PHILIPS
TRANSMITTING VALVES

EDITORIAL

POWER REGULATIONS

Among the regulations controlling the amateur one of the most important is that relating to the power allotted to experimental stations. Under the present arrangement a power of 25 watts is permitted, and it is quite obvious that noncompliance with this limit renders the holder of a licence liable to serious consequences.

With this subject in mind it is necessary to point out to our members that in the forthcoming Centenary contest the logs of all contestants are liable to be published, and therefore it is obvious that they must comply with the regulation governing power. The contest committee reserves the right to inspect the stations of all contestants, and check the power in use. Naturally this must agree with that shown on the log sheet. Any deliberate inaccuracies will lead to disqualification.

Deputy officials will be appointed for each State, and they will be responsible for the observance of this rule in their respective sections.

Furthermore, all experimental stations are likely to receive a visit from an official of the Radio Inspector's Department at any time to confirm the powers stated in the questionnaire recently completed. Experimental licensees, in their own interests, should conform strictly with the power granted by the department.

It is known that when radio inspectors recently visited certain stations the power used was in excess of that allowed or shown in the questionnaire forwarded to the department. It is anticipated disciplinary action will be taken for breaches of the wireless regulations in all such cases.

INTERFERENCE

Old man interference keeps bobbing his head up most persistently. Now that most VK hams have that P.M.G. questionnaire in hand we should all be on the qui vive.

Seriously, though, "what's to do about it?" An old proverb says, "Never trouble trouble till trouble troubles you." Interference, a veritable nightmare to some, is the exception to that proverb.

Build up the goodwill of your station by visiting the nearer BCL's in person. Ask them if they have received any of the various kinds of interference usually associated with ham transmission. Your conversation, you will find, will possibly drift into explanations of your transmitter, and what you can do with it.

Instead of an enemy you can very easily make a friend.

If trouble arises the BCL is sure to make contact with you, and not the RI. We know this system works, and works well.

Place the onus of the complaint with the listener, and your alibi is irrefutable. If conscientious, each ham will have made every effort to eliminate any cause for trouble. May we quote another proverb—"Prevention is better than cure!"

Now, hams, get busy proving that radio troubles are the exception to most other troubles in life.

BALANCED E. C. OSCILLATORS

By G. Glover, A.M.I.R.E.

The use of directly-heated filaments in transmitting tubes represents a problem in (E.C.) electron-coupled oscillator design, as the entire filament must be isolated from earth (from R.F. point of view).

The three known methods of accomplishing this isolation are:—

(a) Use of hollow tube coils through which connection to other filament leg is threaded.

(b) Two coils wound on same former turn for turn, one being tuned and the other untuned.

(c) Employment of tuned coil in one filament leg, and R.F. choke in the other.

Each of these methods possess disadvantages, which in some cases increase in importance as frequency decreases and larger inductances and chokes are required.

The system about to be described was devised by the writer in order to overcome these disadvantages as far as practicable at 1060 K.C.

Fig. 1 depicts circuit diagram of the C.C. version of revamped oscillator, which is incidentally based on (b), the essential difference being that both coils are tuned. Reference to diagram clearly shows that in so far as R.F. is concerned L^1,L^2 and C^1 are in parallel, $C^{2,3,4}$ & ^{5} merely replacing wires as R.F. conductors. Hence in calculating value of inductance L^1 & ^{2} are treated as one coil wound of two-strand conductor, and the length of entire coil is treated as length when determining length/diameter ratio of coil.

Oscillatory circuit L^1,L^2,C^1 is designed to have high C to L ratio, normally associated with high degree of frequency stability. This condition, however, is not applicable to anode circuit L^3C^6, because this portion of oscillator is essentially a voltage amplifier. Hence it must have high L to C ratio, the converse of oscillatory circuit.

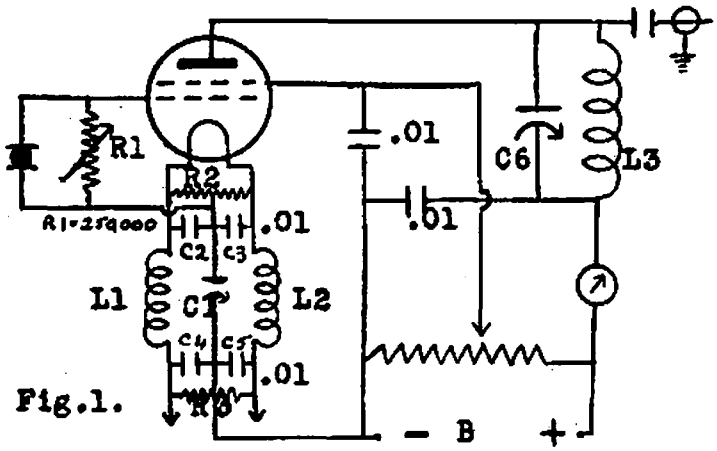


Fig.1.

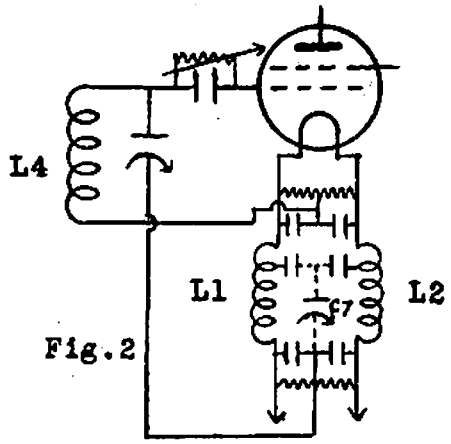


Fig.2

Centre-tapped resistors R^2 & ^{3} provide balanced return or filament connection for grid and anode circuits respectively.

In S.E. version of oscillator depicted in Fig. 2 L^1L^2 each represent only a third of total grid inductance required, L^4 containing other two thirds. $L^{1,2}$ & ^{4} in this case are wound on same former thus:—L^1 & ^{2} are wound on together at bottom of former, and L^4 is then wound on in same direction.

Modus Operandi.

Oscillatory circuits of both forms of oscillator are adjusted in the same as their prototypes, the only point worthy of special mention being value of grid-leak, which should be set at maximum whilst preliminary adjustments are being made, after which value should be reduced until maximum efficiency is obtained, not maximum output. When critical value of resistance is reached oscillations automatically cease, because conditions of high grid swing cannot be satisfied.

Anode circuit is tuned the same as any other amplifier—that is, for minimum plate current.

The C.C. version of oscillator upon which writer conducted his tests is at present efficiently controlling modulated-amplifier (QB 2/75) of 3YB.

There is another application for oscillator, that is, why not couple it to aerial in usual manner and operate it as one tube COPA or MOPA?

Furthermore, anode circuit may be tuned to harmonic frequency and used to control —1 amplifier tube of same or higher rating, depending upon harmonic employed. The harmonic output may be further increased by shunting C_7 (as shown with dotted connections in Fig. 2) across I/n^{th} portion of inductance corresponding to n^{th} harmonic, and tuning this subsidiary circuit and anode circuit to selected harmonic frequency.

HAM HETS HAM

If anything in ham radio has gone ahead during the past 12 months or so it is fone xmissions on the 200-250 mx band. As a matter of cold fact there is so much activity on these frequencies that it would appear almost impossible to find suitable channels for all who wish to operate. The object of these xmissions is primarily to keep ham activities prominently before the B.C.L.'s, and so create a niche for ourselves in the public mind, as I contend that it is only by giving real service that the ham can hope to retain the privileges which he enjoys to-day. If you will just place yourselves in the position of "listeners" any Sunday (day or night), with a really decent receiver, you will be astonished at the horrible heterodyning that is present, particularly between 230-250 metres, all of which I believe can be very easily avoided, if a common sense view is taken, and personal feelings sunk to the advantage of everyone and ham radio generally. Back in 1928 Victorian fone hams realised something of what was necessary, and a scheme (proposed I believe by VK3SW, then president of the division) embodying fixed frequencies with a 20 KC separation was submitted to the Chief Inspector of Wireless. The idea was very favourably received officially, and unanimously adopted by the section. In practice it gave excellent results, and was later extended to country stations. During the past year compulsory Piezo Electric (xtal) control has been adopted on all frequencies below 1499 kc. (W/L of 200 mx and higher). To everyone interested it is very apparent that a similar scheme has now become an absolute necessity for the Commonwealth, with the possible exception of W.A., whose time differentiation of from 1½ to 2 hours leaves the sixth district gang in the happy position of having the air to themselves after the W.A. "A" and "B's" have closed down. Obviously the frequency allocations for all States will have to be worked out by one individual, and that could very easily be accomplished by the simple expedient of each district forwarding the number of active stations operating during Sundays. The allotted W/Ls could then be controlled by each district, with a reasonably good chance of successfully ending the present chaotic conditions. The third district country stations are allocated quarterly, but the metropolitan gang receive theirs monthly. In the case of the latter, allocations are strictly according to the merit of their work, an allocation committee of four non-active transmitting hams deciding according to their observations over the previous month. A xtal pool has been created, and all xtals are handed in at each meeting and re-issued according to the new allocations. Will each district secretary bring this suggestion before his next meeting, and so make an effort to end the present unsatisfactory state of affairs.—VK3TH.

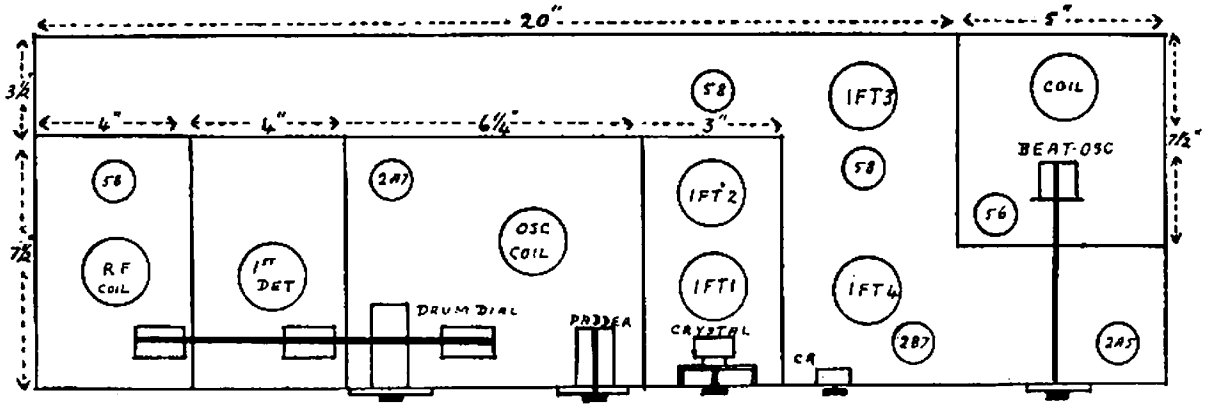
Centenary Single Signal Super

By VK3HK.

Part II.

Adjustments and Lining Up.

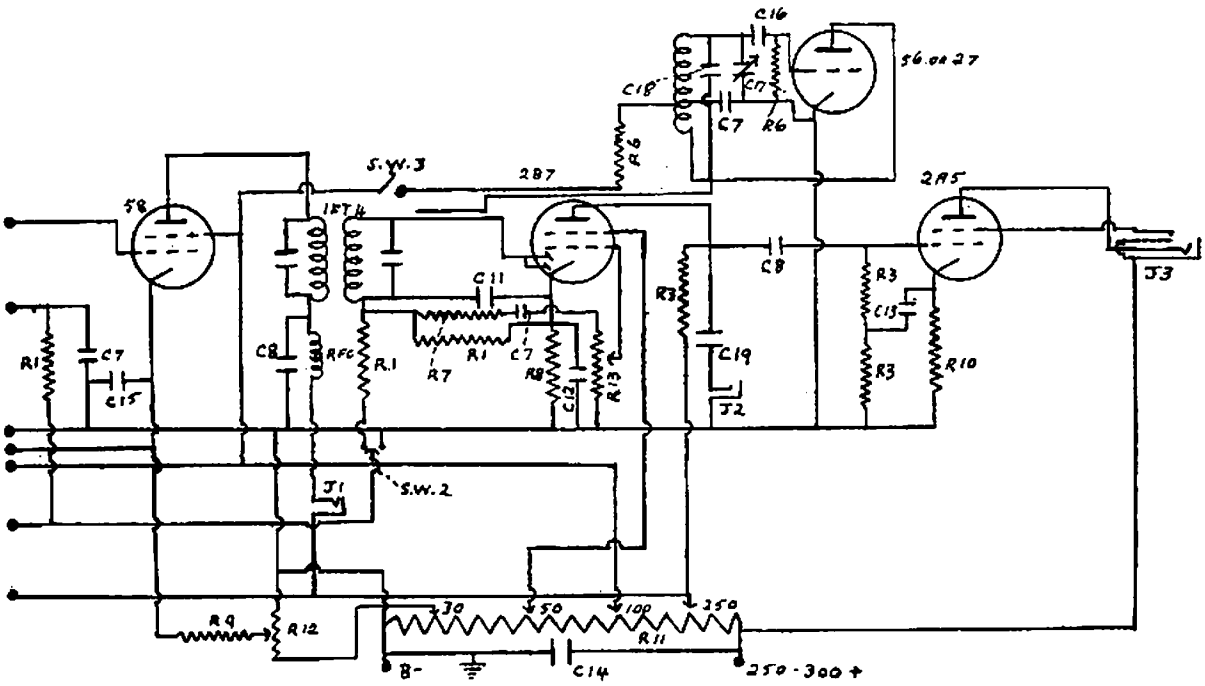
This is the stage we all like to get to, but make sure all voltages are adjusted to correct values first. First of all, put the quartz crystal in an oscillator, which can be your normal one, with a bigger tank coil for the occasion. Run a lead from somewhere near the tank coil of oscillator, but not connected to it, and connect it to the grid of the second I.F. tube. Now, with a meter in J1 (10 ma scale), and A.V.C. switched in, beat



LAYOUT OF CHASSIS

when a signal is tuned in. Having made the coils, plug in the 3.5 mc set first; adjust condenser drum dial to 10 on dial (plates in mesh). Now switch on beat oscillator, switch off A.V.C., and adjust gain of I.F. by means of R12. Next turn first oscillator padder dial to approx. 22½, and tune in the 3.5 mc signal from a frequency meter; switch back to A.V.C. as in lining up I.F. stages, but turn up R12 again, and adjust detector series condenser to maximum dip.

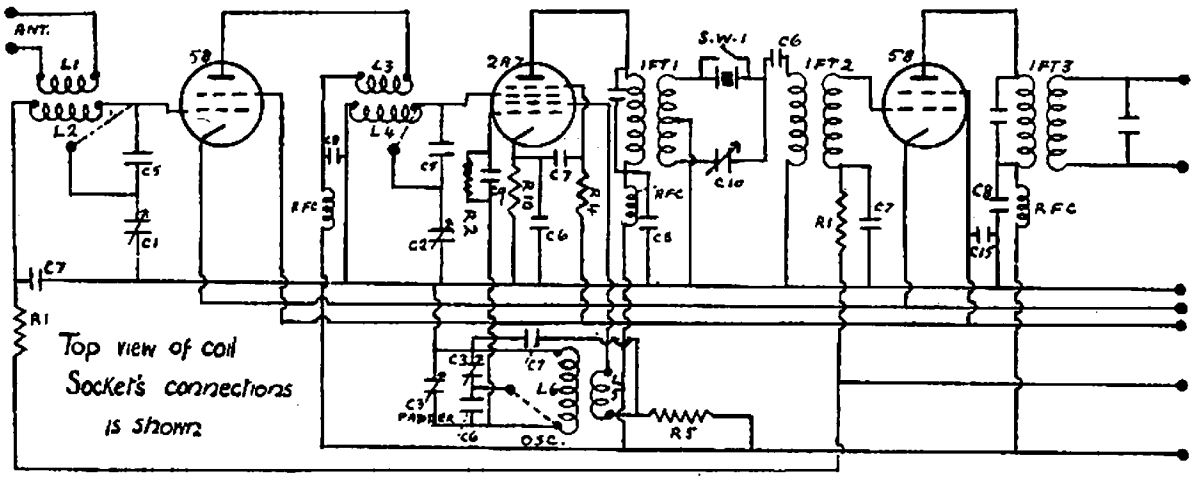
oscillator off and R12 turned up (R13 is used as vol. control when using A.V.C.) adjust the trimmers of I.F.T.4 to lowest reading, i.e., resonance. Then move pick-up lead to first I.F. tube, and do likewise with the trimmers of I.F.T.3, then remove it and bring it near the crystal filter components. Now tune I.F.T. 2 to resonance. Finally go over all trimmers again very carefully, with pick-up lead coupled only sufficiently, or not at all, to get a small dip in meter. Use an insulated screwdriver (made of insulating material) in these adjustments. I.F.T.I. is adjusted later, Forget R.F. coil as yet. Now follow the signal from frequency meter with drum dial alone to 4000 k.c. end of band. Then try the adjustment of detector series condenser again. If this capacity has to be increased to bring detector back to resonance the detector coil is too big and vice versa. When you are satisfied with det/osc tracking make similar adjustments on R.F. coil, not touching detector and oscillator again. At this stage I.F.T.I. can be lined up on this same signal. The 7 mc and 14 mc coils are done similarly, though greater coupling to frequency meter may be necessary.



CIRCUIT VALUES.

C1-2-3-4.—.000164 mfd. midget condensers (Essanay).
C5.—.00005 or .0001 mfd. adjustable mica or air.
C6.—.00005 mfd. mica (TCC).
C7.—.01 mf. Pigtail paper type.
C8.—.01 mf. mica.
C9.—.0001 mfd. mica.
C10.—3-plate midget condenser.
C11.—.00025 mfd. Pigtail paper type.
C12.—10 mfd. electrolytic condenser.
C13.—.1 mfd. Pigtail paper type.
C14.—2 mfd. 500.V. Mansbridge.
C15.—.5 mfd. Pigtail paper type.
C16.—.00025 mfd. mica.
C17.—13-plate midget condenser.
C18.—See text.
C19.—1 mfd. Mansbridge.

R1.—500,000 ohm 1W carborundum resistor.
R2.—50,000 ohm 1W carborundum resistor.
R3.—250,000 ohm 1W carborundum resistor.
R4.—10,000 ohm 1W carborundum resistor.
R5.—25,000 ohm 1W carborundum resistor.
R6.—100,000 ohm 1W carborundum resistor.
R7.—1 meg ohm 1W carborandum resistor.
R8.—4000 ohm W.W. bias resistor.
R9.—85 ohm W.W. bias resistor.
R10.—450 ohm W.W. bias resistor.
R11.—25,000 ohm voltage divider.
R12.—5000 ohm W.W. potentiometer.
R13.—500,000 ohm potentiometer vol. control.
RFC.—Honeycombe type B/C band RF chokes.
J1.—Closed circuit Jack for 0-10 ma meter.
J2.—Open circuit Jack for phones.
J3.—Fil control Jack for speaker.



COIL DATA.

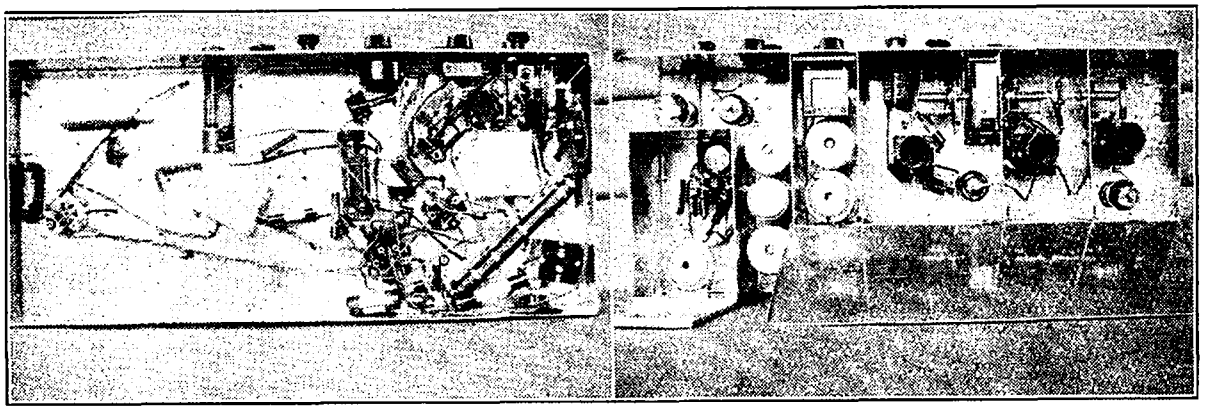
Dial Spread. Degrees.	Band. Kc.	RF Turns. L1.	RF Turns. L2.	Det. Turns. L3.	Det. Turns. L4	OSC Turns. L5.	OSC Turns. L6.	Wire Gauge.	OSO Padder Setting.*
80—31	14,000—14,400	5½	7⅛	7	6	Same as 7000 Kc.		Grid coils 24 DSC others 30 DSC	57
80—24	7000—7300	9	17½	13	13	6	6½	As above	52
90—10	3500—4000	11	45	27	43	15	18	All 30 DSC	22½
100—0	1050—2100	18	31	29	56	18	31	All 30 DSC	25

*100 degree dial—100 when at maximum capacity. All coils close wound, and coils spaced from one another by ⅛ to ¼ inch.

One point to watch is to keep the final setting of the series condensers of detector and RF at exactly the same setting as on 3.5 mc band, and make any adjustments to oscillator coil as regards tracking. It is easier to do than it is to explain here. For 200 mx band all adjustments as regards tracking are made on oscillator coil. By loosening the set screws on the shafts of detector tuning condenser and RF condenser coupling these movable plates can be rotated by hand, and by checking on each end of the dial it can be found whether the oscillator is covering too wide or too narrow a band width, and alterations made accordingly to oscillator coil, the detector determines the coverage. Then detector condenser set-screws are tightened, and any adjustments made to RF coil to bring this in line with detector and oscillator. This completes lining up and I.F. filter receives attention.

Tune in signal from frequency meter, say, on 7 mc band. Replace crystal in holder, remove short from crystal via SW.1, have A.V.C. in and beat oscillator off. Tune to bottom of main dip (it will be very sharp, so go carefully); make any adjustments to trimmer of I.F.T.I. Now switch off A.V.C., and beat oscillator on. Tune beat oscillator for a heterodyne of, say, 1000 cycles or so. Next tune drum dial through zero, beat to the same pitch of note on the other side. Here's the S.S. adjustment on C10 (which has a panel control); adjust for minimum response by ear carefully. Sometimes if the beat oscillator is tuned to the other side it gives a better minimum. To go over the adjustments again will be an advantage. It will be found if a good crystal is used the image to signal ratio is very surprising indeed. Switch out crystal, and note background level come up, and, if you were tuned exactly to the peak with the crystal in, there should be no rise in signal level. This is about all that can be said, and the adjustments are easy after a little experience, and it is seen what the filter will do. Background level goes well down; electrical qrm and natural static go down also with no lowering of signal. Local qrm from neighbouring stations is also greatly reduced. One point to be stressed is the importance of a good tuning dial, as the tuning is very sharp. At the same time the set is not difficult to tune; in fact, far nicer than a regenerative set. It is single control as far as tuning. All other adjustments are aids to good reception conditions. The crystal filter responds best to xtal pdc; rac is given less cordial welcome. However, by tuning beat oscillator to a different beat note, rac can be copied through pdc, and pdc through the roughest of rac easily. It throws the signal not wanted down, and brings up the wanted one surprisingly well. The I.F. filter will be found of value on phone where qrm is bad. Quality goes to pieces, losing all treble frequencies, but being quite intelligible for voice. Last but not least I can recommend this set as being the ultimate at present in cw. reception especially.

Any hams who would like to hear the original in operation are welcome. VK3LN has the original model.

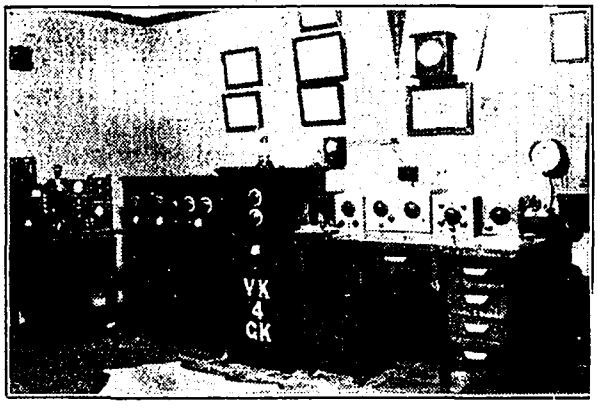


An intimate close-up of the receiver layout and wiring.

STATION DESCRIPTION

VK4GK is located at Wynnum, on the shores of Moreton Bay, and about 10 miles air line from VIB. Although the operator has dabbled more or less in radio since the days before Australia boasted a regular broadcasting station, it was not until being transferred to the present QRA that a serious effort was made to qualify for A.OP.C.

The station first came on the air towards the end of June, 1930, with a TB04/10 in a TNT hookup, the plate supply being a BC power pack, the input varied from 12 to 15 watts. After four months activity with this rig we qualified for WAC, thanks to conditions obtaining on 14 mcs at that time. The following year a DET1 made its appearance (the result of much self-denial). As interest was now being taken in 56 and 28 mcs, it was our intention to use the new tube in a four-band TNT, but results were rather disappointing on 28 and 56



mcs, so a change was made to series-fed Ultraudion. The alteration proved a very wise or lucky one indeed, as with this Tx. almost everything that was heard could be worked on 7, 14 and 28 mcs, and results on 56 mcs. were also encouraging. QSY was a matter of seconds, as direct antenna coupling was used. We simply unclipped ant., changed one coil, swung the tank condenser round a few degrees, clipped on ant. again and o.k. As the 7 mcs coil would tune to 14 mcs and the 14 mcs to 28 mcs by using low C, very often QSY was effected simply by altering the tank capacity.

A new power supply was made up for the DET1, consisting of 2 GUI rectifiers, using the ordinary filter, 4 mfd fore and aft of a 50 henry choke, a bleeder of 10 watt pilot lamps was arranged across the filter output, so that it only came into circuit when the key was up. By changing the lamps it was possible to match the two loads on the supply. No doubt this had much to do with the T9 reports that were so often received. It might be as well to mention here that in trying the above scheme it may be found necessary to use a capacity resistance arrangement across one or both of the key or relay contacts in order to prevent arcing or sparking.

This Tx. was used in the 1932 B.E.R.U. contest when, to use 3WL's words, "4GK ran away with the award for VK." It is housed in the first cabinet on the left of the operating table, and, although seldom used now, is still kept intact, perhaps more from sentiment than anything else. The second cabinet on the left holds the C.C. Tx., which consists of a '47 as C.O., a TCO4/10 as buffer or doubler, and a DET1 as P.A.; for several reasons 3.5 mc is not exploited by us, so a 7 mcs xtal is used in the C.O. This Tx. is quite orthodox, and little need be said regarding it, except that although better output and higher efficiency is obtained than from the Ultraudion it is sometimes hard to believe that the D.X. shares the same opinion. Phone is seldom used, but modulation is effected by connecting the secondary of the I to I transformer (output) of the speech amplifier into the grid circuit of the P.A. between the grid resistor and the bias negative. Bias is increased until the output drops about 50 per cent.; modulation is then upward, and good depth is obtained. The speech amplifier consists of a '24A coupled to a '45 by a Philips resistance unit. That nothing more elaborate has been constructed is due to the fact that the above seems to do its stuff o.k. The plate supply for the C.O. and buffer

consists of two Philips 505 rectifiers, with the usual filter. Keying is in the filament C.T. of the buffer. This system is certainly worth a trial where there are fussy B.C.L.'s; only a small keying filter is used. There is also a push-pull TNT Tx. designed for 56 mcs. The job looks fb, but its performances to date belies its appearance. Altogether there are four receivers, a 56 mcs super-regen., an O.V.I., and an Electron-coupled detector, with one or two stages of resistance-coupled audio. The E.C. job is the most popular at present. Although one and two stages of R.F. have been tried, the results of our experiments have left us a little bit 3ML's way—at least, so far as C.W. is concerned.

A S.S. super, using reaction in the first I.F. stage, has just been completed, but still requires licking into shape. The Monitor, which was constructed before the station went on the air, is that published in QST a few years ago by Geo. Grammer; the valve used is a Philips A-109; battery upkeep is a small item.

There are two absorption type meters, one of which is calibrated from 4 to 6 metres. The vacuum-tube voltmeter is mains operated. This instrument can also be used as an external voltmeter or milliammeter, there being one megohm of wire-wound resistors built in the case, also the necessary shunt resistors.

The antenna system is the much "sworn at and by" Windom. This type performed well from the very first, and is not likely to be displaced. For anyone obliged to live in quarters as we do, it is most convenient. Anyway, one cannot chop too many holes in other folks' property. The flat top, which is 66 feet 6 inches long, and just on 50 feet high, runs north and south. The feeder is attached 9 feet 4 inches from the centre. Radiation is obtained on all bands, 56 mcs being no exception; in fact, as far back as June, 1931, 5 metre fone was put over to 4GW in Northgate. The test was made after sunset, and the usual 56 mcs antenna had not been rigged up. This may have been the first 5 metre fone attempted in VK. Telefunken modulation was used. Before concluding this brief description of 4GK it might be in order to say a few words about the operators. The senior op. is not heard so often these days, but Madeline, probably the best known of the juniors, is on regularly, and tries to get at least one QSO per day. She is only 11 years of age, but seems to have plenty of confidence, so long as the OM keeps out of the way. May we take this opportunity of thanking all those "hams" who helped and encouraged her to get over "key fright." We know that the same consideration will be shown to her younger brother. They have taken to it quite voluntarily, and we have raised no objection; the gear or junk is here for their use, and they are at liberty to make their own tests and experiments. Most of the gear is of our own construction, power transformers, filter chokes, by-pass and coupling condensers, etc., also the cabinets.

4GK has been successful in winning the trophy donated by Mr. C. Gold (4CG), for the best station in VK4, for the third time in succession.

May we add that for some time we have been trying to obtain a firemen's W.A.C., but still require Africa and South America.

(—CHALLENGE—)

Hamilton, N.S.W.
20/6/34.

It is hereby notified to the ham fraternity in general, and to stations 3WL, 3MR, 3RJ and 3OC in particular, that the undersigned stations do jointly and severally challenge the heretofore mentioned stations to compete with them in the Melbourne Centenary contest to be held in October, 1934, for a prize of £4. The said prize to be composed of 10/ donations from each of the eight competing stations, and to be placed in the hands of the committee in charge of the contest 14 days prior to the commencement of the contest. It is hereby also notified that the undersigned stations desire that the adjudication shall take place upon the total number of points scored by them in the open section of the contest as against the aggregate points of the herein before-mentioned stations.

Signed.—S. W. Grimmett (2ZW), J. C. Cowan (2ZC), L. T. Swain (2CS), A. Fairhall (2KB).

CREEPING SIGNALS

By R. H. Cunningham, VK3ML.

The causes and remedies of creeping signals outlined below are purely from the practical point, and are the outcome of several years of experience at the writer's station in the operation of both self-excited and crystal-controlled transmitters. Perhaps there are many other causes not quite so common as those given here, but fortunately these have not been experienced at VK3ML!

There is an idea amongst many hams that once C.C. is installed all the troubles and bugbears of self-excited transmitters may be forgotten. Unfortunately this is not correct. Unless care is exercised in the choosing of the components and the design of same, one is likely to run across trouble.

Let us deal with the self-excited transmitter first. The most common cause of creeping, as drilled into us by those genii behind QST, is the employment of low C tank circuits. This has been dealt with very fully in that magazine, and will not be treated again here. However, on constructing a high C tank, it has been found that excessive creeping occurs when the components have been poorly constructed. As a matter of fact, the writer took great pains when making up a 25 watt T.P.T.G. push-pull oscillator, and was surprised to hear the signal swing over several degrees of the monitor dial. Eventually the trouble was traced to the tank condenser. It was a .0005 mfd receiving type with the plates closely spaced. On touching this condenser it felt warm. Here lay the source of the trouble. With the high tank current that is developed in High C circuits, particularly in PP oscillators, unless the condenser is well spaced, it will heat up, and in turn will heat up the signal. Remedy: use a condenser designed for the power used. Similarly, one should look upon tank coils, wound with high gauge wire, as being another potential source. From "flea-power" up it is best to use copper tube inductances and avoid the risk of creeping should the power be increased at any time.

Having thoroughly examined the tank circuit and satisfied oneself that it will "stand the gaff," the only other part of the circuit to inspect is the grid. Here two causes have been discovered. Firstly, the grid tuning condenser. This may not influence the tuning to such an extent that the tank condenser may, but on one occasion the cause of a creeping signal was traced to it. The trouble was caused by a leaky piece of insulation that allowed R.F. to hop across it when any grid current flowed. One cannot be too critical when choosing a B/C condenser for the transmitter. Only the best of them deserve promotion to the ranks of transmitters. The second cause located at one stage was due to a poor connection in the grid circuit wiring. This immediately set up an RF resistance that took a delight in sliding up and down a thermal-resistance scale! Last to be mentioned under the SE heading, but certainly not the least possible source of trouble, is the overloading of tubes. When overloaded, a tube's elements are naturally working under a great strain, and consequently are liable to expand, thus causing a variation of all its characteristics. Even with a very high C tank circuit it is possible to vary the tube's shunt capacity to such an extent that it acts like a vernier to the tank tuning condenser. Remedy, use tubes in accordance with your licence!

Now, turning to the crystal controlled transmitter, there is less likelihood of creeping than with the self-excited rig, but it is like constructing a building with concrete without reinforcing it with iron; it is not so good as it might be. A crystal will do a certain amount of work, but must be assisted by a good layout and components. The chief cause of creeping with CC has been found to originate in the grid circuit, due to (a) poor contact to crystal holder plates, and (b) run-down bias batteries, both of which introduce high resistance losses. If the crystal should heat, then, naturally, one must expect a change in frequency. Overloading a small tube as CO is apt to produce crystal heating, because of the excessive RF grid current. Hence the use of a penthode as CO is justifiable, because of the smaller RF current that will flow, compared with a three electrode tube. Bias batteries in all stages of a CC set should be checked periodically, as they have been found to cause many a grey hair when trying to locate the lost amoere or so that used to go up the aerial!

SIMPLE LATTICE MASTS

By J. Rich-Phillips, VK3CD.

In this article the writer may be accused of plagiarism from notes on these affairs by Beckley in QST some time ago, but as my mast was erected many months prior to his I can plead "not guilty." The need had long been felt for a mast which would support the tightly drawn feeder systems of three separate Zepps without buckling all round the compass, but owing to a natural dislike for manual labour nothing was ever done, although all sorts of plans were drawn up. When, however, some of the local B.C.L.'s started shoving up white oregon poles something had to be done to keep the ham flag flying.

Cost had to be kept down, and as hardwood was about the only timber to be obtained in an up-country timber-yard this was used for uprights, latticework being ripped down out of old boxes, benzine cases and the like. All wood was planed up. Although a lot of extra work, this saved much paint. A further economy was effected by getting whitelead, raw oil, etc., and mixing it at home. Three coats were applied at decent intervals, the last having a dash of blue mixed in to whiten it, and a few drops of dryers.

Four guy wires were used, at the top, at 40 ft., and at 20 ft., No. 12 galvanised fence wire being used for these. Total cost of 60 ft. mast was well under 30/. Hams in the vicinity of a timber-yard would be well advised to make inquiries regarding planed stuff, as a neater job can be made with much less work if decent timber can be got reasonably.

A start is made by joining up the four corner pieces. Lay them out on a hard, level surface (the writer's mast was made in a sheepyard!), and join with an ordinary halved joint, allowing two feet overlap and securing with a couple of ¼ in. bolts, first painting inside of joint and bolts thoroughly. A square section job is suggested, tapering from 17 in. square at bottom to 6 in. at top for a 60-footer. A solid section is placed every 10 ft., which prevents any tendency to get out of square. These are next made from 6 in. x ¾ in. boards in two layers, the grain of one layer being placed at right angles to that of the other, like plywood, and well nailed. Top is fastened to a block of red gum 6 in. square, 9 in. long, tapered to correspond with mast. As a matter of fact, tapering is not important, as appearance will be just as good without. The main point to watch is that uprights are securely fastened to top block, which is really the "keystone" of the whole thing. Having made up all the section squares and the top block, place them in line and at correct distances, and place one of the uprights along one corner. Let it in flush with the sides, nail with 2 in. nails, staggered to get a better grip, and secure uprights to top block with ¼ in. bolts, run right through. Lay another upright on the other corner, and treat it likewise; then turn assembly over and fix the other two uprights similarly. If desired, one upright can be fixed to each side of the squares instead of two on one side and two on the other, but this entails more work, and is not warranted. The mast will now begin to assume some definite form, and a start can be made on the latticework. Make sure the job is lined up correctly and is firm and level before nailing the lattice strips on, as it is difficult to correct bends afterwards. Mark the side into sections two feet long, and lay a strip from the left bottom corner of the first section to the right top corner, and from the right bottom of the next section to the left top, and so on right up the side. A moment's thought will make this clear. When this side is finished turn right over and do the opposite side, in this case starting from the right bottom to the left top, and so on, so that the mast, when completed, presents a criss-cross side elevation. The thing by this time will be getting fairly firm, and when the remaining sides are completed in the same way the mast will be beautifully rigid and it will be possible to pick up the top with practically no sag in the middle.

Many ways of securing aerials to the top could be suggested, but this will depend mainly on what the builder has in mind. The writer fixed a cross-tree to his mast, one arm of which supports the 20m antenna and provides a firm anchorage for the dead feeder. This enables feeders to be pulled very taut without sagging the antenna itself, the disadvantage,

of course, lying in the fact that the antenna and feeders had to be fixed before erecting. The 40m wire is run over a pulley fixed in the end of the cross-tree, and the halyard is run down the centre of the mast itself. For 20m a vertical wire is suspended from the opposite arm of the cross-tree, and the feeder system connected at the bottom.

For lengths up to 60 ft. at any rate no special apparatus is necessary. After all usual precautions as to clearing guy wires, halyards, etc., one end was blocked against the mounting posts (4 ft. 6 in. red gum posts, sunk firmly in the ground to coincide with corners of mast), and with the aid of three hefty and admiring locals pulling on the guys and pushing, it was easily raised. The corners were bolted to the posts, the guys tightened and mast trued up.

The resulting job is well worth the trouble, both for appearance and service. Personally the writer would like to see such a type at all ham stations, even if only to be different from B.C.L.'s. He will be very pleased to make clear any details, but the job really is very simple once a start is made.

A HAM ABROAD

(By A.R.A. Special Foreign Correspondent.—VK2NR.)

I have been in England for nine days now. The trip has left me feeling very fit, but I must confess I feel very strange over here. That is not the fault of the G hams, believe me. They have been splendid, and have gone out of their way to make me feel at home.

G2MI, with whom I had kept a long sked in Australia, met me on arrival in London. He showed me to the hotel where Clarry (G6CL) had booked a room, and carried "umpteen" pounds of luggage for miles and miles.

Later on I went out to Maidstone, and saw his (2MI) station. He uses a T610 in the final, and gets fb results. Maidstone, to improve your knowledge, is in the centre of Kent, which was looking its best when I arrived. The trees were just getting their leaves. Every possible shade of green exists in English woods. While at Maidstone I met three other hams of the district, and with us all talking at once, conversation was novel and interesting. I met the famous G2ZQ, but his station was in the process of being rebuilt. Later I saw G5YH, who has a very neatly built station with T610 in the final. He gets out splendidly, and contacted VK2HC for me. Wasn't I pleased to work old Ray from "the other side"?

Earlier I had met the great "Clarry," and he is certainly an energetic one, and it's no wonder the BERU, RSGB membership is now over 2000. It is he who is responsible for the society's smooth running. We discussed many topics, chiefly, of course, the BERU contest. The rules for the next contest may be considerably different from those of the last, but the whole matter is in a state of flux, so comment would be unfair.

Birmingham.—Coming here I met a wonderful gang, and G6XQ, an old friend on the air, exceeded any of my expectations in his welcome. I shall leave a report on 6XQ, 5BJ, 6DL, and ye olde 5ML over to next letter, but I can say that G5ML is a marvellous station—e.g., 2-1KW bottles in final stage on 20 and separate TX for 40, with even bigger tube. Tubes in P.A. cost about £60 to £80 (bear up, VK's) Australian money, and the rest of the gear is on the same lines. Besides such gear 5ML is a wonderful operator, and a great ham, so no wonder we hear him. Photo. of 5ML and more dope next time. Cheerio, VK's,

JACK 2NR.

HARMONIC

Harry Kinnear, the new president of the Victorian division and editor of "Amateur Radio," left VIM last Wednesday on a business trip to the New Hebrides: and since his departure Harry's residence has been considerably damaged by fire, caused, according to the newspaper report, by a short circuit in a radio set. As the family cat has a habit of investigating the works of the BCL set, possibly sparks were caused by the catswhisker.

CORRECTION

(To the Editor.)

Sir,—I have read with interest and appreciation the article by Mr. H. R. James, which appeared in the July number of "Amateur Radio." I feel, however, that it is desirable to point out an apparent error which occurs.

After deducing the total voltage gain required in an amplifier intended to fully excite a 250 from an input of 0.3 volt, Mr. James states that number of stages required equals:

$$\frac{\text{Total required gain}}{\text{Gain per stage}} = 40 \text{ stages required.}$$

He has apparently assumed that the total voltage amplification is equal to the sum of the gains in successive stages, whereas it actually equals the product of the gains in successive stages. Thus, 40 stages, each giving a gain of 7, would give a theoretical overall gain of—

$$7 \times 7 \times 7 \times 7 \times \ldots\ldots\ldots \times 7^{40} = 6.37 \times 1032!$$

It will now be seen that if n be the number of stages required un = total required voltage gain = G, where u is the effective gain in each stage. Hence n log u = log G.

Since u = 7 and G = 280,

$$n = \frac{\log G}{\log u} = \frac{2.4472}{0.8457} = 2.895.$$

Hence, under the conditions imposed, three stages of impedance coupled 227's would a little more than fully excite a 250.

A similar correction is required for the immediately following example—thus, if the amplification per stage be 15

$$n = \frac{\log G}{\log u} = \frac{\log 280}{\log 15} = \frac{2.4472}{1.1761} = 2.081$$

Hence, two stages of high M U A.C. tube amplification would be required.

—Yours, etc.,

W. H. BLACK (VK3WB).

[We wish to thank, through these columns, the many other interested hams who have been good enough to point out and correct this mistake in Mr. James' calculations.—Tech. Ed.]

OPERATING AND EXPERIMENTAL SECTION

Devoted to Amateur Operating, Contests, Communications and Tests.

Conducted by VK3ML (Traffic Manager Vic. Div.).

It has been a long-felt want that we should have a section in this magazine specially devoted to the above phases of the ham game. "Amateur Radio," now being soundly established, offers an excellent "bureau" for collecting information from experimenters and helping to hand it around to others. Some occasional advice and helpful hints on these various subjects are sure to find a home for themselves in many shacks. In starting this section we are sure to overlook many important items that could very well be dealt with under this heading, and, as the column concerns all readers, we would appreciate your suggestions for its betterment.

Operating is one of the weak branches of amateur radio throughout the world; otherwise we would not have special articles treating it in nearly every ham magazine printed. The obvious reason for this is that we are not called upon to imitate commercial stations by constant communication and traffic handling, and we are satisfied with only getting into communication with one another and exchanging reports and greetings. Consequently, this is done in the best manner thought necessary. Unfortunately, the P.M.G. Handbook does not go into the procedure to its fullest possible extent, leaving much to the imagination of the amateur operator. Therefore, without the valuable aid of QST and other publications, operating would be a very haphazard and go-as-you-please matter. So, with a view of trying to create a standard and a snappy sense of operating, we are going to print a series of "Notes on Procedure" each month with the hope that this might help clear the air of useless qrm caused by unnecessary dit ditty dit dit da da, etc.! We invite you, too, to contribute your advice on operating for the benefit of this section.

Work on the ultra high frequencies is a matter that calls for co-operation on the part of all the hams that take an active interest on these bands. Reports have arrived from W that great work is being done this season up to 1500 miles on 28 mc, and we should expect something to happen here also. Without co-operative efforts the battle to overcome present difficulties will be harder. We mean that unless each man, each State and each country pull together and co-operate by means of definite schedules, we are going to take a long time to achieve what we think is possible on these ultra high's. Having created this "bureau" we are contributing our share towards organised efforts in that, with the support of all members and divisions, we can organise schedules that everybody will know will be kept.

"Amateur Radio" can act also as a centre for data obtained, technical, meteorological or otherwise, and pass it on to other members of the fraternity. We have plenty of dope on 56 and 28 mc, and we are going to lay it on thick from now on, as Australia wants more and more hams down on those frequencies working together under a definite organisation with "Amateur Radio" as the "Information Bureau." Then we will get somewhere—otherwise nowhere.

Each division has been asked to appoint one representative for the supplying of reports on the activities in his State monthly, and for extracting all possible data from his fellow-workers for this section. Next month we shall

publish a tentative schedule for both bands for all States. By this time we hope to have some Interstate notes and arrangements for publication. In the meantime, please get in touch with your divisional secretary for further information.

The R.S.G.B. is conducting a 28 mc contest over a period of twelve months, and the complete set of rules is set out hereunder. Reports of reception should be communicated to the society through "A.R."

CONTEST RULES.

1.—The contest is open to all licensed amateurs.

2.—The contest will commence at 00.01 G.M.T., October 1, 1934, and will conclude at 24.00 G.M.T., September 30, 1935.

3.—Licensed power must not be exceeded.

4.—Contacts may be established at any hour, and on any day during the contest period.

5.—One point will be scored for each completed 100 miles of contact, with a specific station (e.g., contact with a station 99 miles away scores no points, contact with a station 658 miles away scores 6 points). All distances will be measured by a great circle line between stations.

6.—A minimum signal strength of QSA3 must be recorded before a contact counts for points.

7.—In computing his final score a competitor may claim points for each different station worked once during each calendar month.

8.—Proof of contact in writing may be required by the contest committee.

9.—The decision of the president of the R.S.G.B. will be final in all cases of dispute.

10.—Entries must reach the secretary R.S.G.B., 53 Victoria street, London, S.W.I, not later than November 15, 1935.

G2YL seeks a sked with a VK, for 28 mc! Any offers? Here's your chance to try and create a record by a VK for 28 mc. G2YL, whose QRA is Miss Nell Corry, Redholm, Walton-on-the-Hill, Tadworth, Surrey, England, will look forward to hearing from at least one VK re 28 mc, so all interested write her please.—BERS 195.

28 MC TEST.

We are indebted to VK3JJ for the following information:—

W8CRA, Cannonsburg, Pa., wants to work Australia on 28 MC, and will be testing on 28,008 kc at 0300 G.M.T. (1 p.m. M.S.T.) each Saturday and Sunday in August. If heard, he will appreciate a report.

Having an excellent location, and 852 Final, W8CRA should be one of the most likely W's to get across. His signals on 14 MC are very strong, and heard at all hours of the day and night.

A.O.P.C. SYLLABUS.

For the benefit of those desiring to study for their "ham ticket" following is the syllabus for amateur operator's certificate of proficiency.

The examination embraces the undermentioned subjects:—

(a) Transmitting and receiving (by sound) at a speed not less than twelve words per minute (five letters being counted as one word).

(b) Knowledge of the adjustment and operation of low-powered apparatus; and

(c) Knowledge of the principal abbreviations and regulations laid down by the International Telecommunication Convention.

2.—In order to qualify candidates will be required to:—

(a) Send plain language morse signals on an ordinary telegraph key for five minutes at the prescribed speed. The accuracy of sending, the correct formation of characters, the correctness of spacing, freedom from errors and the ability to recover from breakdowns will he taken into account.

(b) Receive and transcribe legibly plain language morse signals at the prescribed speed from a double headgear telephone receiver or loudspeaker used in conjunction with an audio-oscillator. Where an audio oscillator is not available a buzzer may be used.

(c) Know the functions of the various components used in low-powered radio transmitters of all descriptions. General knowledge of the underlying principles and types of radio receivers.

(d) Know the most common faults in radio transmitters and receivers, and the methods usually adopted to remedy them.

(e) Know how to vary the transmitted power, and the radiated frequency (wave length).

(f) Know how to test and charge accumulators, and the usual steps taken to keep them in good condition.

(g) Possess an elementary theoretical knowledge of electricity, magnetism, high frequency circuits and radio principles generally.

(h) Possess a good general knowledge of sections Nos. 2, 3, 4, 11, 13, 14, 17, 22, 67, 69, 74, 76, 78, 82, 86, 90, 94, 96 to 105 and 107, and appendices I. and III., and the following abbreviations in appendix II. of the Postmaster-General's Handbook issued by the British Post Office.

QRA, QRG, QRH, QRI, QRJ, QRK, QRM, QRN, QRQ, QRS, QRT, QRV, QRW, QRX, QRZ, QSA, QSB, QSD, QSO, QSR, QSV, QSX, QSZ, QTR, QTQ, C. N, AA, AB, AL, BN, CL, CS, GA, MN, OK, WA, WB, XS, REF, RPT, QUA, QUC, QUD, QUF, QUG.

3.—There will be three operating tests and a written examination. The written paper will consist of one paper containing seven (7) questions on theory and three (3) on regulations, and two hours will be allowed for its completion.

4.—For the receiving tests candidates should provide their own headphones if this mode of reception is favoured.

5.—To secure a pass candidates must obtain at least 70 per cent. of the total marks allotted in each subject.

6.—Copies of previous examination papers may be obtained at this office on payment of a fee of 6d. per set, and the undermentioned textbooks will be found useful in connection with the study of the technical portion of the examination:—The "Radio Amateur's Handbook," by American Radio Relay League, and the portions of "Admiralty Handbook of Wireless Telegraphy 1931," enumerated hereunder:—Paragraphs 1-17, 20-71, 75-87, 92, 94, 101, 107-141, 153, 154, 161, 164-167, 169, 175-180, 182, 184-189, 278-282, 290, 298, 306, 349-352, 354, 367, 368, 371-385, 387-389, 394, 405, 407-414, 492-502, 506-519, 526-532, 536, 542, 543, 545, 546, 553, 555-560, 563-566, 569-573, 575-581, 586, 587, 589-591, 595-610, 619, 620, 622-659, 663-667, 669, 671-701, 703, 704, 706, 708-716, 724, 732, 735, 739, 753, 754, 756, 757, 768-771, 818-828, 830, 831, 843-853 and appendix A (omitting references to spark and direction finding).

7.—Examinations are conducted on the second Tuesday in January, April, July and October by the Senior Radio Inspector at each capital city. In the case, however, of candidates resident in the country who are unable to proceed to a capital city, arrangements will be made for examinations to be conducted under the supervision of the Postmaster at the official post office nearest the residence of the candidate on dates coincident with the metropolitan tests.

8.—Full details concerning the examination arrangements will be furnished on receipt of the examination fee of 5/-, which should be lodged, together with an appropriate application in writing, at the office of the Chief Inspector (Wireless) at least 21 days prior to the examination.

9.—The fee for the issue of the certificate is 2/6, but it should be understood that a certificate cannot be issued to any person who has not attained the age of 16 years.

10.—The Postmaster-General's Handbook can be obtained on application to the Chief Inspector Wireless at a cost of 1/3 each copy.

VK3 SECTION NOTES

Key Section

ZO—VK3BJ.

The usual monthly meeting of the section was held at Kelvin Hall on July 3. Over forty attended, and we were pleased to welcome several new members, among whom were 2JX, 3CS (ex-7CD), and 3XQ.

The annual election of office-bearers took place, and 3RJ, 3BJ and 3KN were elected to the respective offices of chairman, secretary and council delegate.

It is up to the gang to give these men their whole-hearted support, and any suggestions for making the meetings more interesting would be very much appreciated.

In conjunction with the short-wave group visits to places and installations of interest will shortly be undertaken, and as many of the gang as possible are asked to roll up on these trips.

It is pleasing to note that among the recent new hams are three members of the short-wave group—Messrs. Quinn, Manning and Argoon, who have the respective calls of 3WQ, 3XJ and 3IT.

3IT is now on 7 and 14 MC under the call 5DT, and he would be very pleased to contact any of the boys. He is building a small T.P.T.G., as it takes too long to start, each over, VKZ's engine and generator, which supply juice to the big crystal rig.

QRZ will no doubt be pleased to know that 3XF is now using xtal after all these years of self-excited.

Separate xtal rigs. are used on 7 and 14 MC by 3JQ, but owing to a severe illness he has not been on the air of late. We are pleased to learn, however, that he is now much better, and we hope he will soon be up to R9 again.

Mucking about is all 3DT is doing at present. What with, Val? YL's??

Since coming to VK3 from Tassie 3CS has been married to a Hartley, but is contemplating a three-stage xtal rig in the near future.

3MK heard with some punk fone on 175 meters.

3ZQ has at last got his receiver working well, but his absence from the air is, I believe, attributable to YL QRM.

BCL QRM has been troubling 3DP, but he has cured the trouble by putting R.F. chokes in the BCL's ants.

3BW has just installed an 800 in his PA, and finds it much more efficient than an RV258.

A wonderful sig. on 14 MC comes from 3MR, who uses 47, 47, 47 and 852 final. Plenty of dx. is worked on 7 and 14 MC with this outfit. 3JO just manages to keep on the air to work his brother, 7OJ. Xmitter now in use is a tritet. 59 co. and f.d., and 46 p.a.

3LQ recently sold his car, so will be on the air more often.

I recently had the pleasure of hearing 3LN's crytsal controlled single signal super, and it certainly is the goods. In a location such as his, with trams on two sides, this type of receiver shines above all others, as sigs. can be easily copied on it. whilst on an ordinary receiver the QRM is terrible.

3JJ has at last become self-conscious of his scratchy sig. on 14 MC, and is building a big xtal rig.

Rebuilding is being undertaken by VK3OC. The new rig should be something out of the box, Ray, o.b., if it is anything like that receiver of yours.

3PR is still up the country, and has not any time for radio these days. (Was down specially for general meeting.)

3HC will shortly be back on the air after several years of inactivity. He will put out high quality fone on 14 MC. I would be very pleased to receive any dope from the gang. It should be possible to make these notes something like those of VK2.

~~VK3~~ Phone Notes

By the time these notes are in print the new chairman and secretary will have been installed, and I sincerely hope that they, with the whole-hearted support of the members of our phone gang, will be able to see recorded for this coming year a progress better than ever before.

We, with our publicity resources available, ought to be able to more speedily help to increase the membership of the institute and the sales of "Amateur Radio." We all know that it is quite in order to make announcements as often as we like about anything pertaining to our institute, so let's think up some original systems of letting our listeners know all about the W.I.A. and "Amateur Radio," keeping in mind, of course, the regulations. As long as our remarks refer wholly to the W.I.A. to the exclusion of all else we will not be violating the regulations.

And now we come to the very important item of interest in the phone section—competition! Preliminaries are going along nicely now, and by the July meeting on Tuesday, 31st, these will have been completed, and the gang will be, I guess, anxiously awaiting the announcement of the final six call signs.

A meeting of the competition committee was held on Tuesday, July 3. Due to lack of entries from the country stations, it was decided that at least one only shall be included in the final six.

The competition committee secretary (Mr. J. Kling, 3JB) undertook to instruct the judges on the finer points of the judging system, which included the importance of keeping in mind the relative R1-9 and Q.S.A.1-5 way of recording strengths in view of the importance of this aspect of a transmission as received in New Zealand.

A motion was carried that the frequency to be used by the six finalists would be 1173 Ke., and that crystals available from the "pool" would be utilised. Also it was moved by Mr. Thompson (3TH) and seconded by Mr. Manning that the finals would be put on the air on the 12th, 19th and 26th of August, in order to allow time for the necessary information to be published in the New Zealand "Radio Times."

Finally it was moved by 3TH and seconded by Mr. Kerley that a first prize in the form of a Ferranti electric clock be donated. There will be absolutely no excuse now for the winner if he is late in any subsequent transmissions.

In conclusion, I would like to say that I hope our new secretary (unlike myself) will be overwhelmed with news of the phone section from the members, in order that these notes might be of greater value to all.

VICTORIAN QSL BUREAU.

Cards are on hand at the Victorian Qsl Bureau, 23 Landale street, Box Hill, for the undermentioned stations, and will be forwarded on receipt of a stamped envelope:—3BC, BP, BR, BX, BZ, CA, CK, CM, CW, ER, ES, ET, FB, FC, FM, GA, GC, GU, GW, GX, JL, JW, KM, KO, KQ, LD, LE, LP, LX. MM. MZ. NC, NG, NW, OF, OP, OZ, PC, PK, PN, PZ, QJ, QZ, RN, RW, TO,

TM, UJ, WB, WD, WK, WP, WX, XF, XK, YF, YL, YR, ZF, ZK, ZV, Messrs. Dinan, Bennett, Mawman, Garraway, Nihill, Salter, Hecker.

The emigration from VK7 still continues, and latest advices show that the next to cross to the mainland will be VK7GE, Geo. Every, Qsl manager for VK7, who shortly after August 1 will be domiciled at Queenscliff, Vic. We are glad to have you, Geo., and hope to hear you under a VK3 sign very shortly.

The additions to the VK3 ranks caused by the influx from Tasmania has been offset, however, by the following Interstate moves by VK3 hams:—

VK3HT is now VK5DT, located at Alice Springs.

VK3OT is now VK4OT, located at Maryborough, Queensland.

VK3BD is now VK2EP, located at Canberra.

VK3FX is now VK2IM, located around Sydney.

VK3NT is now VK5LM.

VK5LG advises that he shortly will be located at Balmoral, Vic., and should he remain there any length of time will be on the air under a VK3 sign.

Island cruises have become popular with VK hams, but whether to soothe and rest the DX-racked frame or to dodge the irate BCL is not known. The latest to propose a jaunt of this description is Ken Rankin, VK3KR, who hopes to visit Fiji during August.

Will the pirate who has been using the call sign VK3ZR please note that this call has been issued to Gilbert Moody, 27 Lennox street, Yarraville, Victoria.

Our sympathy and best wishes for a speedy recovery to Tom Dale, VK3TD, who unfortunately sustained concussion and shock when a police patrol car skidded and somersaulted at Malvern, Victoria, on July 17.

Consequent upon the departure of VK7GE from Tasmania, Jack Batchelor (VK7JB) has been appointed Qsl manager for VK7.

COUNTRY NOTES

NORTHERN AND MALLEE NOTES.

Conditions in the north during the past few weeks have been extremely patchy. 3KR reports some activity on 40 and 20. On July 15 he worked 14 Yanks and VP1AM (Ocean Island) on 40, but conditions on the 20th at the same time were "off," and he only worked one W. By the way, Ken. is taking a trip to Fiji next month, and going via VIS and VIB. Intends to look up many friends made over the air. The Birchip gang are all on QRP (on 3CH's town DC supply). 3WE most active, and, despite his power, has rolled up a total of over 70 phone contacts on 80 for the month, all States (ex 6) and ZL being included. 3LH, being still minus converter, has built a TNT on the mains, while 3CH, awaiting a suitable tranny for his 500-cycle alternator, has blossomed out in a three-stage MOPA.

3OR, despite "expert" assistance from 3KR (who puts on bias batts. wrong way round) is troubled with downward modulation. The no-meter experts, 3ZK, have got a meter at last—500 mills.; maybe they pirated it from local power station. The 80 band is undoubtedly the most popular at present, especially in VK2; in fact, the bulk of the QSO's from here have been with that State. Had quite an interesting time on 2nd in a 5-way fone hook-up, 2HU, 4YG, 3PY, 3ZL and 3WE participating. We looked for 5's and 7's to widen the hook-up, but none offering at the time. 5BR is the most consistent VK5 here, but is closely followed by 5LR, 5IV, 5WJ and 5MD. Although at week-ends the 80's are like a Chinese joss house very few VK3's are heard up here (except the northern gang). The few city stations heard seem to have mistaken 80 for the BC band, and grind out records by the hour, especially 3KT and 3YF. Only city 3's worked here of late were 3BQ and 3KE. Rumour has it that 5XR is coming back to the fold again; the home re YL's must have sunk in after all.

How's this for freak conditions? On Sunday afternoon, July 15, worked 5BR from 1330 to 1615 solid copy on fone. Yesterday (22nd) contacted him at 1130, and called in 3CE for three-way QSO, and found conditions tricky. On one particular "over" 5BR's sigs. practically disappeared for portion of the over, and suddenly rose to Q5R8, and remained so for balance of the over. I remarked on this, and 3CE reported the astonishing fact that he had heard him 100 per cent. up to then, but not after. As Roy (3CE) is only about 20 miles north of Birchip, the freakiness is at once manifest. Opposite to this is the fact that some 15 or more W's and K's can be heard Q5R5 at between 1700 and 1830 nightly on 3900 to 4000 kc. Have heard them working duplex, traffic handling and in contact with ZL (all phone). Several W's have expressed a wish to contact VK on 80's phone, but for success herein I think it would be necessary for us to QSY to above 3850 Kc., as above this is the Yank CW band—and is it full?

WESTERN DISTRICT NOTES.

(ZO—30W—3HG.)

The number of hams in the Coleraine district has been increased to four, 3JE, formerly of Chelsea, being now in Coleraine, where he is working overtime on service jobs. Bill will be on the air as soon as work eases off sufficiently to allow time to get his gear together and adapted to the 230 volt D.C. supply there.

3GC is now on the air from his new QRA, at Bairnsdale.

Conditions, which have been rather poor here lately, have improved somewhat, and Yanks are again easily workable on 40 and 20 mx.

3AL, Ballarat, although kept very busy at his job as engineer at 3BA, seems to make time for a good deal of experimenting, and recently carried out some tests, with break-in phone, of the "push-to-talk" variety, with excellent results. Alf. also has just completed an s.s. super, and says he is beginning to realise what selectivity really is! The transmitter also is being rebuilt, and is expected to be completed in a few days.

3PG still using xtal lock, with a 40-metre xtal, and though results are good on 40 and 80 metres he reports that the xtal doesn't do its stuff so well on 20 metres.

After using a dynamotor (kindly loaned by 3NN) during the R.A.A.F.W.R. relay contest, 3OW is considering installing one in place of the alternator. A good click filter will be required if this is done, as clicks were very much worse with the dynamotor than with the present A.C. supply.

Tube keying of the buffer stage was given a trial one day, but without much success, as the clicks locally were worse than with the key in the P.A. H.T. lead, hil So guess some experimenting will be necessary before the B.C.L.'s are silenced.

NEWS FROM FEDERAL HEADQUARTERS

By G. B. Ragless, Fed. P.O.

The Federal executive were very surprised that so few entries were received for the QRP contest (the second leg of the Fisk trophy competition), and not a little disappointed. It was a long time ago when the previous QRP test was held, and as there seemed a demand for it by a request from a division it was arranged. Con-

sidering how often QRP stations complain that they have no chance in other contests, because of the difference of the power employed, the small entry was deplorable.

Possibly this state of affairs is caused because the State councils are not providing attractive prizes for competition among its own members, but surely the members have the remedy in their own hands if this obligation is being neglected.

When the third contest is held towards the end of the year we hope much greater interest will be shown.

The Federal officers are at present engaged in the checking of the reports, and full results will be published in the next issue.

Commercial QRM on Amateur Bands.

It will be remembered that this matter was discussed at the last convention, since which the secretary has been in touch with Mr. K. B. Warner, secretary of the I.A.R.U.

From this source it appears that they have the matter well in hand, and a satisfactory cessation is expected shortly, following representations being made. It will be recalled that the Russian Government (in whose territory most of the stations are) did not recognise the Washington conference of 1927, but attended the recent Madrid conference, and was a signatory to its decisions. These decisions must be ratified by the Soviet Government before they are binding, and as soon as this is done it is expected that the I.A.R.U. will take the required steps to have the stations removed.

Royal Birthday.

The following message was sent by the traffic manager (Mr. F. M. Gray) to Mr. Arthur E. Watts (president of the R.S.G.B.) for despatch to H.R.H. the Prince of Wales in accordance with B.E.R.U. custom:—

Members of the Wireless Institute of Australia and all other amateurs throughout the Commonwealth join in extending to His Royal Highness the Prince of Wales sincere loyal greetings for a happy birthday anniversary.—(Signed) H. N. Bowman, VK5FM, Federal president."

THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

A.R.A. NOTES.

Scandal from Headquarters.

The past month has been one that has shown very little activity, barring, of course, the usual monthly meeting, etc.

The three field days arranged should prove a great success. The first next Sunday will be well supported according to reports and promises up-to-date. The rules, etc., are published in another portion of this paper.

The second Fisk trophy passed successfully, and it is a pity the local talent was not more interested. A QRP contest, however, does not seem to invoke much support.

The usual monthly meeting was held at the Y.M.C.A. on July 19. The field day was discussed, and support afforded it.

Three new members were elected—2AE, 2MT and 2FT. The first named, David Adams, must be incidentally the youngest ham in Australia, and has only just attained 14 years of age.

2GS, our newly-elected technical officer, is now looking after lectures, etc., and a debate with Zero Beat Club was arranged. "Plate versus Grid Modulation"—2GS, 2ZR, and another representing the A.R.A. 2FT, a navy op., entertained for a while with some interesting stories. 2PG discussed the possibilities of manufacturing badges, showing the call signs of the individual ham. Two of the heavy weights, Hams 2DU and 2HZ, are both in bed with bad knees. Guess their knees won't support 15 or 16 stone, while flu is taking quite a toll. 2OH, 2HY and others are the sufferers.

RE A.R.A. FIELD DAYS.

At the committee meeting held on 5/7/34 it was decided that a series of three field days be held, extending over the months of July, August and September, to take place on the last Sunday of each month, i.e., July 29, August 26 and September 30. Each field day to be held in a different locality, the first within an eight-mile radius of Liverpool. A cup to be presented by the A.R.A. to the entrant securing the lowest number of points over the series.

The hidden transmitter will go on the air at 10 a.m., and will operate continuously until 3 p.m., with the exception of a half-hour break between 1 o'clock and 1.30 p.m. for lunch.

Points will be allotted on the following basis. Each contestant will be debited with one point per minute, commencing from 10 a.m. until such time as he reaches the hidden transmitter. Any contestant not finding the transmitter by 3 o'clock will, of course, have been debited with 300 points. The contestant with the lowest number of points over the series will be declared the winner.

The following details are agreed to in connection with the first of the series, i.e., that to be held on Sunday, July 29:—

(1) Cars and contestants to be assembled outside the railway station at Parramatta at 9.30 a.m.

(2) W. Picknell to be charged with the responsibility of locating a suitable position for the transmitter, and for placing the same in position ready for operating at 10 a.m. on the date in question.

(3) All those attending are reminded to bring with them the necessaries for lunch and tea, as it will not be possible to make any arrangements for catering such as has been done previously at Wyong.

(4) Members will lunch between 1 p.m. and 1.30 p.m., when the transmitter goes off the air, and will continue their search afterwards.

(5) At 3 p.m. and continuously for fifteen minutes, i.e., until 3.15 p.m. the location of the transmitter will be broadcast, and it is desired that all participants make their way to the same, when tea can be taken in picnic form by those assembled.

(6) In view of the fact that points are being allotted on a time basis, the transmitter will be kept going over the whole of the period stated, irrespective of whether the same has been located by contestants or not; thus a participant who is, say, the 8th, 9th or 10th, to arrive at the transmitter will secure an advantage over those arriving afterwards.

(7) Members of the committee may take part in the search, and receive recognition for locating the transmitter; but in the event of any one of them qualifying for the cup the same will be presented to the contestant next in order of merit, not being a member of the committee.

ZONE 1 NOTES.

Jim 2PE is heard occasionally on 40 mextres cw; haven't heard of him for some time. The Broken Hill gang seem quiet, although 2DQ is heard amongst the dx at times.

ZONE 2 NOTES.

2O—2HV.

Zone 2 chaps will be pleased to hear that Ray, of 2HC, who has been ill for some time, is now back home again. He has been ordered a rest from radio.

2KR collects the belt for the most consistent ham in zone 2, and turns out some very fb stuff on the peanut outfit. Cecil contemplates high

power when Gunnedah installs A.C. Look out then, Cec o.m.

A cordial invitation is issued by Teddie, of 2CR, to all and sundry to come up and see him some time on 80 metres (wish I could, Teddie, o.m., but BCL's will be BCL's). The rig there is the same 4-stage xtal, and RX AC three. 2nd op. Jack awaits his call sign. Congrats., Jack, o.m. Sa, o.m.'s a voice from the dead. Ever heard of an ether buster from way up north called 2WT? Well, Russ is staging a comeback. Say, o.m., the old 7MC fone gang are howling for you, so don't be long. Do you remember 2WU, 2ET and 2CR (Hi).

Wonders never cease. 2ZP is back on 7 mc. Arthur threatens to W.A.C. on 7 mc. ere this year passes. Well, anyhow, o.m., good luck. 2HV, over a brief vacation, in VIS, is rebuilding to MOPA, and hopes to gain experience ere installing xtal. Bet he misses those RAC reports then (Hi). Say, o.m., any junk left in VIS? No notes this month from the rest of the gang.

ZONE 3 NOTES.

The North Coast gang revel in intimate 80 metres fone QSO's, and with the aid of 4GG and 2KR form a pleasant entertainment to listening BCL's. 2CR, 2WS and 2NL have particularly strong signals, and quite good quality on 80 2CR, being possibly the strongest in Sydney. Crieff 2XO can also be heard with a very solid CW, and fone signal from the Garden of Eden.

ZONE 5 NOTES.

Eric 2BP has the misfortune to be off the air, due to doctor's orders, and is unable to furnish any notes, but while off will build the Centenary T.R.F. of 3WL and 3OC from "Amateur Radio."

ZONE 6 NOTES.

Zone officer for this section is also very QRL. 2NM, of Dubbo, puts out a very fine transmission on 80 and 240 metres, with the aid of a final amplifier of P.P. 210, Heising modulated.

ZONE 7 NOTES.

During the early part of July conditions on all bands show a distinct improvement, and it is to be hoped that we will experience something like normal conditions for the rest of the winter. 3.5 mc. has been fairly active lately, with some good fone rag chews in progress. The Wagga gang—2WO, 2TH, 2YW and 2JA—are all active on this band. 2WO celebrated its first birthday on June 13, and to mark the occasion a special test transmission of recorded items was given on 240 metres, reports coming in from as far as VK5. 2YW also inhabits the publicity band occasionally, and puts out some very f.b. music. 2TH effects 7 mc. transmissions occasionally, and worries BCL's with key clicks. There appears to be a new addition to the Young gang in the person of 2TM heard on 3.5 mc. with QRP. 2FI back on QRP again pending further changes in power supply. 160 metres was attempted a few days ago, but the antenna proved too big an obstacle, so a new one will be tried shortly.

ZONE 8 NOTES.

After many weeks of building and rebuilding the Albury gang are showing a little more activity. 2YI has a 3-stage crystal cc rig, but is having trouble with P.A., and waiting for 500 v. tranny. 2QD has a 2-stage MOPA on 40 mc., using single 46 in P.A., with about 10 watts. Antenna is single wire Hertz. 2OJ has 4-stage cc. on 40 metres and 80 metres, with two TC0410's in P.A. and 100 watts, half wave Zepp. VK5JC (ex 2JC) is on again with MOPA and T9R6 here. Where are you, Jack, 2DN? Not heard for a long time, also 2VF and 2JJ, how come? 2EG is still raising W and K6 with the ole 210, and getting R5 through poor conditions on 40 metres. Has separate SE rig and Vert. ant. for 20 metres, as his P.A. won't neutralise on 20.

NEWCASTLE ZONE NOTES.

A.R.A. (N.S.W.).

The Newcastle gang are at present flourishing under the guidance of the Newcastle Amateur Radio Club. Two new hams have come into being, Mr. G. Cowan, 2ZC, of Adamstown, and Mr. R. Glassop, 2RG. We wish to heartily congratulate these boys, and welcome them to the ranks of ham radio.

The Newcastle club has just concluded its first contest, and was it a wow? Voted by all hands the best ever staged. The contest was a miles per watt, with rules so framed that every member could enter regardless of his power with some measure of success. The contest was won by Gerry Challender (2OF), with twenty-five watts, who worked 23 yanks. The contest lasted six days, and the operating time had to total no more than 12 hours. The minimum operating time was one hour, but more than that time could be used at one sitting. The times of the contest were limited to 4.30 p.m. till 7 a.m. each day, with 2 p.m. the starting times on Saturday and Sunday. Lionel Swain, 2CS, worked 20 yanks, Jim Cowan (2ZC) 25 yanks, 2ZW worked 20 yanks, 3VE's, 3J's, 3K7's, PK, VS2, VS3. 2RG worked 9 yanks, which was a wonderful effort for his first week on the air, and he is to be congratulated. 2ZC also worked OA4J, and thus added another continent to his list. Jim has done wonderful work for such a short time on the air.

Club nights in Newcastle have become the mecca of all hams in the district, and the club has the unique distinction of having a membership absolutely confined to licensed hams, ALL of whom are active. Under the circumstances it claims to be the finest club in Australia. Any dissentients?

It is all very well to be the holder of a ham ticket; but it is claimed in this district that that is not enough. Every ham should attempt to justify his existence, and use his privileges at least as far as it is in his power to do so. The stations in this district are rapidly improving, and most of the hams boast crystal. Amongst those rebuilding are 2KB, who is installing in easy stages an 852 with 3000 volts on its plate, and driven by a National 203A. The set is being built in a steel frame, and the tranny does the eyes good, sitting up in its own drum of oil. One wonders why he wants all this gear, as Allan, on 25 watts, worked 19 yanks, and could have worked a lot more had he used all his available transmitting time. He, incidentally, came second.

The net result of the husky sigs being put out within the small district of Newcastle is a rapid growth of super hets., of which we have three working fb and many more to come.

2MT had trouble with his 21 xtal in the contest, the p.a. refusing to neutralise. However, Charlie managed to get it going shortly after the contest, and his usual fb sig is there again. 2FN has shifted his QRA again, and is, therefore, able to have the R1 ban removed. Geoff. had a lot of bad luck with BCL QRM in his five-metre work last year, and has been virtually off the air for a long time. 2UF is having a patchy time at present owing to poor receiving conditions in his location, which not only affects him, but causes a great deal of trouble amongst the BCL's also. He does a great deal of work on 20 metres, and has worked a long string of Yanks on that band.

The zone extends its sincerest sympathies to Max Austin (2KZ), who has recently lost his mother.

Very little is known here of the coalfields gang, who seem to keep religiously to themselves these days.

WESTERN SUBURBS WHISPERINGS.

A.R.A. (N.S.W.).

By VK-2-MY.

2DW.—Has changed his 46-s from P-P to parallel, and finds they are much more efficient. Also has been trying alterations to his antenna, with improved results. Seems strange that while all textbooks advocate the superior results from PP—2DW, 2FO and myself have had far better results from 46-s in parallel.

2JT.—On xtal, and seems to find his new QRA better for DX than Lakemba. Charlie comes in very solid, but must find the fone gang a trifle inconvenient when chasing DX.

2MY.—QRL rebuilding, and trying persuade a tape transmitter to work. When do I get that biscuit, "QRZ"? Anyhow, can I offer you a suggestion, old boy? Give the time and date of the observation; it will help a lot, whereas with no date it is useless. TNX. Here's one that's not a fish yarn. My antenna is 15 feet from ground at each end. Decided try some angle radiation, so stuck another pole on the shack end, and gave the antenna a bit of an angle on the CQ W-9. XM gave me QSA 5 R 6, so decided to try another few degrees. On going out to haul the antenna up found that the dead feeder had fallen off, and was lying on the ground.—Marconi, hi.

2FD.—Now on with Tritet rig a la QST, 59 CO 59 FD ES 210 PA, which he reports as fb. Gets R8 from K6. Had lot trouble with an ancient BCL set while on fone. Solved the problem by switching antenna around 45 degrees. Seems to be bitten with rifle shooting bug lately.

2ZH.—Mac is running neck and neck with Alan, of 2AH, for the position of DX king in VK2. Can hear him working DX stations that I never even hear every time he is on. Worked Cuba last week, thus completing WAC on both, 20 ES 40 fb, old boy.

By the way, did you hear the little story about Mac. the other night, or rather the morning after the ARA dinner? Mac arrived home very early (in the morning), and decided to chase a little DX before he turned in. He gave a good CQ, and listened in very carefully. Not a ham on the band, but dozens of commercials. Oh, well, CQ again a real long 'un. Results ditto; never heard so many commercials. Oh, well, I'll turn in. Investigations next morning showed that Mac. had his receiver tuned to 30 metres.

2PT.—Charlie is one of the 5 M/x gang, and spends most of his time down there waiting for the DX to break through. Rather a curious thing down there, although most of 'em can hear one another they don't seem to work each other. 2PT-s 50 M/x rig is a sight for sore eyes, and sure gets solid. Uses a pair of 210-s in PP in PA of 4-stage CC.

2GR.—Seldom heard on 40, occasionally on 80, and always on the BCL band. Judging by the letters he gets from ZL listeners, Alec. is more important than lots of the B stations. Believe that 60 ft. pole has crashed. What's the trouble, Alec? White ants or 2 JG-s key clix get it.

2FO.—Seems to be fast developing into 80 m/x fone fiend. Has changed his PA from 46 in PP to 46 in parallel, and finds it lot more efficient. Also spends lot of time on 5 M/x.

2MW.—Not heard much on 40. Another of the 5 M/x gang, when on 40, has a nice T9 sig.

2WR.—Is reported to be changing his QRA again. Back to Bellevue Hill. Methinks the BCL sets are even worse out here, Alan, than in the eastern suburbs. Which reminds me of a good 'un.

A well-known western suburban ham suddenly caught the fone bug, and proceeded to pump canned music out for hours at a time. The morning after one hectic session his next door neighbour, a rather bellicose individual, hailed the ham over the back fence. "Say, do you know that I got six new stations on my wireless last night." "Go on," bit the unsuspecting lid, "and who were they?" "You, you Blanky," came the snappy answer, and for the next week CW reigned supreme.

5PK and 5FB are due in VIS on a flying visit during October. 5FB's sky wire would put any A class station to shame. No wonder the VK5s find DX easy.

Ralph, of 5PK, should have a very pleasant hour or so with 2ZH, trying to find a country that the other has not worked.

Anyhow we are looking forward to seeing them, and showing them "our arbor es our bridge."

2RY.—Ivan is another convert to the Tritet. Has been very QRL building a super. Now can report Yanx R max on 20. (Most of mine appear r 3 Hi).

2OM.—Another to catch the rebuilding bug. New rig well under way to consist of a 5-stage rig with a Z3 in the final stage. After one lamp at the bottle I was inclined to think that it will take a small powerhouse to work it, Hi. Jack at the present time is vy QRL hunting BCL offenders es QRM fer the R I.

2QR.—Sorry to hear that Bob has been on the sick list at present. He is on holidays in VK4 for five weeks, trying to regain his health. Giving the Yanx a rest, eh. We all hope you are quite recovered, Bob, and soon back with the gang.

2PG.—TNT DC sigs, loop fone. Now I ask you, Ronnie, what sort of a carrier would it be? Received a report from Ivan Skivinsky in Moscow, fb, o m.

2BX.—Seems to have given 5 M/x a rest, and comes in 'R9 on 40. Bert must be glad that 2 OM is QRL, as their antennas practically touch each other.

NORTH SHORE ZONE.

ZO—2DR.

40. mx is still belching forth much DX and 80 is a bit querelous as to when its turn will come. However, there's a fair sprinkling of hams up there now.

2AE takes the bun this month. Can you beat this: Dave told me that in a recent mandarin eating competition he graduated to second place by putting down 130 in an afternoon! What a boy! 2AE has been working yanks hand over fist with his 3-stage xtal, and has developed a good fist on that bug of his. Experiments with a buzzer in his key lead were successful as regards DX, but were a ghastly wash-out in the opinion of the locals, who had to bear the brunt of the fierce QRM, so 2AE has wisely abandoned the idea.

2AH is building service equipment, and has decided to abandon his idea of rebuilding his xmitter for the present.

2BA has been on 20 a bit. Bruce is looking well; evidently the sea air suits you, o.m. 2BJ has been heard on 80 mx with fone, which has evidences of a few bugs still to be slain. Hope to hear more of you, Keith, o.m.

2CE is new chap out at Harbord. Would like to hear from you, o.m.

2DA has now 3-stage xmitter, with Tritet 59, 46 buffer, and two 46s in pa.

2DA is thinking of adding an 852 as the fourth stage. Harry has been working 3-way skeds, with VP1AM and VE5HC. Has anyone beaten this for a three-way DX sked? I think the record's yours, Harry, o.m. WIA/ARA traffic skeds, with VK3, are now running.

Sa, you budding A.O.P.C. aspirants, take note that 2DR sends Morse practice on 80 mx on Tuesday nights between 7 and 7.30 p.m. Sydney time, the various groups of morse being checked over on fone. I have already quite a large class making use of these practices. Come in on it, chaps; let me have your reports, and I'll include your name in the list of those taking

the practice. This list is read out on fone before the practice starts. 2AG was given a supposed FB T250, but found that the electron ejector had thrown in the sponge (hi). Hard luck, o.m. However, remember that T250s aren't usually given away with a pound of teal

The current-fed aerial at 2DY recently came down much to Don's disgust. 2EL has been on 40 a lot, and I think he was on 20 the other day clg CQ DX. Eric is departing for ZL shortly.

2HF is building new 11 tube super, with xtal filter, in preparation for Centenary contest, and hasn't had much time to be on the air. 2HG still works DX after midnight. Isn't your bed comfortable, o.m.? 2HI is thinking of building PP 45s or 10 in SE rig. 2HY has installed new Philips mercury vapor rectifier, and reports the output doubled. Roy was using half wave rectification previously. 2HY has added X1AA to his fb list of DX worked.

Poor old Bill (2HZ) has been laid up with a bunged knee, and has been working much DX and locals from his bed. 2HZ "is elated over working a yanx on 20 mx. A QSO with U.S.A. on 20 from Bill's location is a signal for celebration." (Hi) 2JY hasn't been on much. 2EZ has been active at Killara with a sig. which sounds T9, although emitting from a perk using 45s in TNT! The antenna at 2EZ is current fed, and is only 10 ft. high! 2LD is thinking of putting in Tritet CO.

2VQ is situated at 260 Pacific Highway, Artarmon, and is using pp 45s in Colpitts. Sigs vary from PDC to RAC.

2OT has been heard at last on 40 with fb sig. Evidently the navy is in port at last. 2AK is active again on 40 with CW. Paul has rebuilt his rig. 80 mx has seen quite a bit of 2KJ and his fone.

2KM has found DX fair during the month. Tom has been vy QRL, and hasn't been on the air much. 2KM has PDC sig., but with a bit of a chirp.

VK3FX has come to stay in VK2, and will be on the air shortly with new VK2 call. Welcome, o.m., and please start the day well by letting me have a little news occasionally. 2LU is a new ham in Lane Cove. Con, of 2LZ, has been on the BC band, and has many ZL reports to his credit up there.

2LZ says that there are quite a few Europeans, VEs and Js coming in on 20 mx in the early mornings, but they are extremely difficult to work. Tennis and fone just about fill 2NG's time. 2NW is using 46s to drive 10s in pp in the PA. 2NP has been consistent on 40 and 20. 2OE is out of the radio profession now, but still keeps up his interest in ham radio. 2OE is interested in high speed Morse. 2RD is thinking of staging a comeback. Reg. recently acquired a YF, but evidently ham radio isn't entirely outed. Hope to hear you in the future, o.m.

2TB has been heard on fone a bit. 2VR is chewing over the idea of building a new shack in the back yard . 2VG gave me some valuable advice on grinding crystals. With Rex's system both grinding the crystal and grinding the teeth are reduced to a minimum. (Hi) Now, Ian (2XC) has rallied round tremendously by letting me have news from the Mosman chappies. I'm deeply grateful to you, o.m. The only active hams in Mosman appear to be 2FM, 2UG, 2PV and 2XC. all being on 40 mx. However, 2XR was heard on one night, the first time for about a year. 2XR uses an 852, so all the boys feel very jealous and upset, as it is a playground for spiders, dust, etc., for nine-tenths of the year.

2XG is another one with a really fb rig. (TCO4/10s in pp.), who hardly ever appears nowadays. 2FM is about the most active station at Mosman, and uses a 3-stage xtal with a 210 in final. 2FM and 2XC seem to be the only DX inclined ones (hi), and between us we have worked quite a few yanks. 2FM excels, however, and has been working quite a few Europeans in the late afternoons on 40 mx. Quite good for this time of the year. 2PV gets on occasionally with a terrific local signal. Peter is fairly QRL Uni, and doesn't get over much time for ham radio. 2UG is the only phone exponent at Mosman, and makes up for the deficiency elsewhere, as his fone is really fb. 2FM and 2XC have had some interesting tests by swapping over stations. Thanks very for that fb little bulletin of doings, Ian, o.m.

VK5 (SOUTH AUST.)

Mid-winter conditions now exist in South Australia. Misty rains and damp nights have doubled the number of power leaks, and only hardened hams are landing anything in the way of DX.

On 80 meters local, Interstate, ZL and occassional W phone stations can be heard working all the time. 20 meters is good at times, but it is surprising to see that only a few of the local hams take advantage of the feasts of DX that can be heard on this band from time to time.

The monthly general meeting, which was held on Wednesday, July 11, took the form of a demonstration by the Technical Development Section. There was a large crowd present, nearly 80 members.

The first demonstration was that of a cathode ray oscillograph working. The apparatus was loaned by the University. 5OA then gave a demonstration of measuring short wave lengths by means of Lecher wires.

5BJ has on exhibition a very neat 59 Tirtet oscillator, which impressed members with the amount of drive it had on 20 m. and 40 m. 5RP was in charge of a large and varied collection of microphones, which range from the old-fashioned carbon types to modern crystal and electro-dynamic microphones.

The institute's frequency measuring apparatus receivers and transmitter were also on exhibition.

5WW is a new ham on the air. QRA is W. Walker, 20 King street, Alberton. Rig for the start is an electron-coupled transmitter and a superhet converter receiver. Another new chap on the air is 5HD. He is 5BC's brother, and as he has his shack at the bottom of the yard there is sure to be plenty of QRM between the two. 5AL and 5QR are still in the country, pounding the keys of their portables. 5BM has not been heard on for a long while now. What's wrong, o.m.?

Rumour has it that 5BJ will get plenty of QRM directly. One of the old hams in his district is to return to the game. 5CX was seen among the crowd at the recent T.D.S. demonstration. 5DO must be having a hard job selling refrigerators this weather. 5GC is heard on occasionally working locals. This ham has a super QRP receiver, using 57 and 56. Plate voltage is about 45 volts at one mill. 5JH and 5MK will soon have to buy new mikes. The old ones are nearly worn out with rag chewing.

5BK has not been heard on lately. 5KH has excellent taste in records for his f.b. 200-meter transmissions. The rest of the 200 m. gang are still fairly active. 5BY can always be relied upon to have a good yarn with WS on Sundays. 5DR still broadcasts the railway engines to BCL's. 5RP has disappointed the BCL's in re-

cent weeks. Bob has all his time taken up in servicing work.

A dicky bird has whispered that 5LF, one of the old hams in VK5 is getting bitten by the radio bug again.

5LB can now send 25 dots to one dash on his new bug. 5CL, at Caltowie, was heard working a VK3 recently. Evidently the wheat has not overgrown his shack yet. 5LD has been having a lot of trouble getting his 3-stage xtal rig to perk properly. The rig has been responsible for several mysterious noises, which cannot be explained. 5FM was seen at the meeting the other night, explaining to Launce the intricacies of R.F. chokes. Is 5LX coming back? His name was noticed among the list of renewals the other month.

5MD is still playing around with phone. 5SU has been rebuilding his shack in between R.A.A.F. work. 5RH still works DX with his MOPA. 5WP has got his single sig. working f.b. now.

5RT has evidently got over the glamour of the first few months of married life! Bob is present at nearly all the meetings again. Has been experimenting with a Tritet, using a 57 instead of the 59. Bob likes the 57 better.

5RX does a good job for the institute, handling the QSL bureau. George is building up a new xtal rig, and after that intends to try 5 meters again. Seeing the 5 meter rig at the recent T.D.S. demonstration proved too great a temptation for him. 5SR, 5LG's second love, still comes on the air at odd times with a note that sounds like a 15 cycle power station going willy-nilly. Leith says they don't need monitors with a note like that. Perhaps they know what it is like without listening on a monitor.

5WB still remains a 20 meter fan.

5HW can still blind the majority of members with science. Harry recently completed a very successful series of elementary lectures for the institute. At 5LG self-excited rigs reign supreme again after trying with xtal for some months. Rig in use at the present time is a pp. TPTG, using ACO44's, with 600 volts on their plates.

5WI has been heard on the air more lately. Someone presented the institute with a 210 so that the transmitter could he used again. Who pinched the W.I.A's last 210?

5WJ has a good phone on 40 and 80 occasionally.

5WR is still looking for the ham who used his call on phone, and raised the wrath of the R.I. "Ritch" would like to Rettysnitch him.

5YK has not been heard on the air of late. 5ZY must try by QYL, because he has also been missing from the ether. 5KL still keeps a sked with 6CP on 80 and 20 meters. 5LN has been heard on using a 59 in a Tritet. Also has a good quality phone. 5TX is that QRP these days that a lot of the local boys cannot even hear him. James' batteries are just about dead beat. Has anyone heard 5EK and the Granites gang during the last few weeks? They seem to have QRT. 5DT, at Alice Springs, often QSO's the local gang.

5PL, of Quorn, is now in the city, but has not been heard yet. 5CR still breaks up the ether with an unstable RAC note. 5NR still has f.b. modulation and volume behind his fone transmissions. 5GR is not heard on much now.

5RF still blows filter condensers faster than he can buy them. That high voltage tranny and 83 have certainly proved expensive in the long run. Incidentally Colin has designs on a B class ticket.

Would all country hams let 5RX know their QRA's, as otherwise they might lose valued cards. Cheerio and 73s.

ERIC HALLIDAY AND 5LG.

VK6 (WEST AUST.)

(ZO—6CP.)

The annual general meeting of the above division was held at headquarters on June 21, there being a good muster of xmitting and associate members. The president, 6AG, occupied the chair, and, after the minutes were dealt with, gave a comprehensive report on the year's activities. The council were warmly congratulated on their lion-hearted efforts under adverse conditions, the president stating his appreciation of his team. The balance-sheet and report were received, and show that the treasurer was hard put to make ends meet. "Unfinancial members, please note."—(Ed.).

Both the president's report and auditor's report and balance-sheet were acclaimed in the usual manner by the meeting.

The election of officers resulted in three new councillors being elected, and the team now comprises 6AG, KR, CX, CP, PK, GM, BB, LJ, JK, with good old BN as associate representative.

At the conclusion of the annual meeting the monthly meeting took place. Very little business resulted, but a lengthy and well spoken address by Mr. Schofield, the junior member of the students' class, gave members a full knowledge of the existing conditions of the class. A call for volunteers for Morse and theory classes resulted in thirteen hams offering their services.

The council has not yet met at time of writing, but the classes are already under way, and will be routined by council at its first meeting. In the meantime, boys, keep jogging.

6CP explained to the meeting the condition of mag. sales, and stated that he was going to draw up a schedule for hams to enable a sequence of articles being available for publication. So emphatic was the demand made by CP that BN wished to know the colour of CP's shirt.

The meetings closed at 10.30 p.m.

Since last bulletin things seem to have gone to the pack in VK6. The various bands are unusually silent, and even those with the bug very bad are missing. Of course, conditions on all bands are pretty punk, so this may account for the absence of our lads. This last couple of week-ends on 20 mx. has been a wash-out, much time and patience being lost to even contact a Jap. and a few VK5's.

A few W's at R2 were heard, and Eastern Staters could be heard vainly calling for DX. With so few of the boys here active, it becomes a problem to know just how to fill up our space in the "mag."

Some of the gang are swotting, while others are making plans for that extra special rig in mitters which we all hear about, but very seldom see, or hear, for that matter.

One bright spot in our ham life is the splendid way in which the students are sticking to their guns, determined to get that coveted A.O.P.C.

The council has promised them a good spin for the ensuing term, so let's hope all members stick to their schedule of lectures and Morse practice.

Another thing I would like to remind hams about is that a certain VK5 has complained to me that he has worked eleven VK6's, and has only received one qsl in return for his f.b. card. One station in this State seems to be very unfortunate in not having his cards delivered, as I have had several requests to QSP to him, asking for cards for PKs, ZLs, VK7s, and VK5s. I might also mention that VK4s are on the look-out for VK6s on 80 mx, so, boys, if your sigs strike their cans you are sure of a QSO on this band.

JOTTINGS.

VK6KR not heard at all of late, so I presume he is getting that exam. into his head thick and fast. 6CX states he is working on 40 mx. Sa, om, where?

6CY, of Fremantle, juggling a MOPA on 80, with fone that would be O.K. if the modulation was constant.

6SR on 80 mx. fone, and states that there are nine tubes in the outfit. "Must be some passengers, I think!"

6JK not yet finished that extra special quick change xmitter. Hurry up, old man, or the gear will be out of date!

6KB's latest is a Marconi sky-wire, four feet from the ground, and worked VK4 on 80.

6WP, back from the place where the golden eggs are found, but has not yet decided what to do with all the eggs

6SA still putting his shack in order. She will sure be some place when finished. You might invite the gang to the opening ceremony, o.m.!

6AG still resting and keeping 6HM on the air.

6MN again gone comatose. Must be thinking out a new kind of antennae.

6RA heard on 80 mx fone, with SR, but not so gud as usual.

6RW must be lost in the jungle at Wagin, as, after putting his f.b. 80 mx fone to all States and ZL, has not been heard for weeks.

6KP, of Meekatharra, seeking information on motor generators. Must be going to exercise his right to xmitt soon.

6FL, of Albany, never heard. Hope you are getting mag O.K., old man.

6FO heard on 40, with a f.b. xtal way up in the frequencies.

6CP doing a bit on 20 on week-ends, and 80 on other nights. Arrangements have been made with the student members to get some Morse practice on Wednesday nights at 8 p.m. on 80 mx. Slow Morse will be sent, and at the conclusion the efforts can be checked by students, as the whole of the code will be retransmitted on fone. Reports will be appreciated.

6RL too busy fixing up BCL sets for the Test matches to get his gear in order.

6KO working shifts when he should be on the air.

6PK, another ham, whose duty of keeping the home fires burning, finds very little time to pound brass.

6GM, MN, NJ, JS all silent.—7.3.

VK 7 (TASMANIA)

ZO—7PA.

Hello, gang! Many apologies for missing you last month, but this was due to the change-over of this office. 7NC has contributed for the past 18 months, and is having a rest, so I take up the work where our worthy friend has left off, and will endeavour to give an outline of this little island's movement each month. The ninth annual dinner of this div. of W.I.A. was held on June 2 last at the Arcadia Hotel, Murray street, and 35 members and visitors were present.

The visitors constituted Messrs. W. A. Woods (president Listeners' League), E. J. G. Bowden (Deputy Radio Inspector), and Phil. Medhurst. An apology was received from the Tasmanian manager of Australian B.C.

Visiting members (northern and country) present were 7BQ, 7JW, 7OJ, 7LZ, 7CK and 7AG. The annual meeting was held at the clubrooms prior to the dinner, and proved to be a good idea.

The annual report and balance-sheet showed good progress. The membership list now reads 69, and only one licensed ham in V.I.H. who is not a member of W.I.A. There has been an increase of one or two each month to this membership list of late. A field day was held on Sunday, June 3, in which the visiting members took part. These field days are part of the regular programme in V.I.H., and some good hunts ensue. The institute call—7WI—should be heard again in the near future. It has been a task getting settled down in the new quarters, but this is well advanced now. A superhet. graces the bench, and perks f.b., and the mitter is in hand for construction.

At the annual meeting 3CN, ex 7CH, and an esteemed member of this div., was voted to a life membership—a worthy tribute. We all wish him good luck. He will be much missed here by his intimates. The present trend of activity here is towards superhet. receivers and tritet oscillators. There are several of the former in various stages of construction and adjustment, those concerned being 7BJ, 7JB, 7WI (completed), 7PA (also working), and our very active hon. secretary, and there are wonderful visions.

The other—tritet—has aroused much interest, and a lot of speculation; one or two are in operation here, and several to come. 7NC has had good results with this rig. He is also a U.H. freq. addict, and is always ready to try skeds, so if interested look him up.

7BQ, I believe, has a weakness in this direction, too, so I think VK7 might look up yet, hi!

7JH still does his share of brass pounding, and is always eager for a chat on 20 or 40 meters. He hopes to graduate to M.O.P.A. with tritet osc. shortly, and also gives the "bug" what-oh between times, hi! hi!!

An old call sign, long silent, is to make its reappearance shortly. Bravo, 7AR. If he can find his way out of the network when finished the assembling he should be f.b. with a four-stage rig. eh, Carl? We often hear the f.b. xtal note of 7JB on 40 mx.

7PA has been silent for some months with few exceptions, but hopes to get going again shortly with a now nearly completed three-stage rig. Also using tritet osc., 59, with 59 buffer doublers and pair 46 C class. The 200 meter rig. and QRL with work has been the hold-up here.

Mentioning the 200 meter band reminds me. The gang here still pump out their canned music on Sundays with some f.b. results, 7CW, 7JB, 7CS. 7LJ and 7PA being on regularly.

7WR has not been heard much of late; been trying out series modulation a bit, I understand, and what we have heard has been good.

7RS is another not heard much either. Buck up, Ron. 7HO too much for you? 7DM has promised us a comeback on 200 meters, too.

7CW was in VIB for a few weeks recently, and must have "struck oil." Came to light with a Chrysler just after he got home. Another bus for field days, Crosby?

7JB still chonks round on his old Ek. mobike. They say it knows the country pretty well, Jack.

We don't see much of 7CS these days. Sticks to the fireside, or is it fishing? 7LJ has migrated south again, and is QRL getting things into shape here. Welcome home, Lon.

There are many enthusiastic associate members awaiting the day when they can win their spurs to hamdom. Stick to it, chaps.

Some, also, are suffering YL-itis in a variety of forms. I'm afraid, and can't find the time to attend monthly meetings even. Brisk up, lads, and make the YL understand that you must have another hobby. Before concluding, I would like to mention the first monthly meeting for this year, held on July 3. Attendance was only fair; general business was attended to. Tassie's "grand old man" of radio. 7AH, president for the ensuing year, occupied the chair. We are all pleased to see you there, Pop. We need a few more of your type amongst us. 7GE tendered

his resignation to the position of QSL manager. He has been transferred to the mainland; another VK7 gone. Good luck, George. We hope to be able to hear your call still. Nominations were received for QSL manager, and these have been dealt with by the committee, the result being that VK7JB has been elected to this office.

7RB wound up the meeting with a lecture on "echo" effects, both long and short duration, and answered questions on the subject, which was very interesting to all.

While mentioning Rhudolph, I think it is in order to say that his 200 meter QRT rig. is truly QRT, as he has abandoned the idea.

All QSL bureau managers are requested to note the previously mentioned change. 7JB's address is: J. Batchler, 21 Quarry street, West Hobart.

HARMONICS

According to information received from V8AF, all radio "fans" in Mauritius are having a run of bad luck, because the Government of the island have decided to issue and charge for a licence for **every** receiver owned by each person in Mauritius.

Last month it was published that VU2FY, of India, had announced his intention of entering for the Centenary contest. This month the fact has to be chronicled that VE9SJ, of Toronto, Ontario, Canada, has intimated his intention of rising at 4.00 a.m. in October, during the contest hours, for the sole purpose of qso "VK." VE9SJ is the radio inspector for VE3, so please give him your attention.

FEE3AOG! Yes, it is a licensed amateur call, despite its odd looks! It is the experimental call, often heard on 7 mc, of the Radio Chef, Aviation Station, Gao, French Soudon, West Africa.

The ambition of VK5HG is to have 1000 qso's with W2CC. What an ambition! There is a good chance of the objective being reached, as less than 200 qso's remain to be got. Good luck, Coop, o.m.

—Bers, 195.

Our VK QRP contest was good fun, but once again the En Zedders take the bun. Two of them worked on 80 mx during the contest, and were using respectively P.P. 201A's and 171A's, each with 45 volts on the plates from B batts. 1500 miles with half a watt input—3000 miles per watt. They were ZL1BD and ZL2CS.—(VK3KO.)

VK3EG has purchased the local disused reservoir, which is situated on top of one of Tallangatta's many mountains, to house his gear. Two 60 ft. pine trees on either side will make an f.b. antenna. Ivan now gets R8 from W on 20 mx. What will happen later? He will be struggling up the slopes with his gear for the next couple of weeks, and then for DX, or sending CQ from the bath tub.

Verbatim Copy of a BCL Report received at 2UO in September, 1933.

Queenstown, Tasmania.

Sir,—I was listening the other night on the short wave at 9.15 p.m. And I picked up over the waves at such strength that I am curoius to know what power you were using it was coming in at such strength that I had to cut back the volumn for good reception it was as good and clear as 3LO on broadcast and can you tell me what wave length CQ is using which I heard you calling nearly every Ameture I pick up are call for CQ I remain

Yours sincerly

(Note.—The spelling is as the original, likewise the punctuation.)

Q.R.Z.

Something of a "Tone" Poem.

By Toc H.

Who is this bird signed QRZ?
Who never seems to go to bed,
But wears the fones all night instead.
Perhaps the blighter's current fed?

Who is this guy, that having writ
Sarcasm, every word of it,
Thinks that his gags contain some wit?
No ham! for such 'twould seem unfit.

What kind of egg can this cove be?
Who never seems; at least to me,
To credit decent PDC,
Or knows what's meant by RAC?

What type of insect dares to write
Thin veiled contempt in black and white,
Behind a pen-name sitting tight,
Afraid, 'twould seem, to face the light?

Come forth, my friend, let hamdom see
The sort of Gargoyle you may be,
And if your fist can thump a key,
I'd like to QSO with thee.

—VK2TH.

STANDARD FREQUENCIES.

The Technical Development Section of the Victorian division has commenced work on a standard frequency meter for use as the Australian standard for W.I.A. members. No definite transmission schedules have been drawn up as yet, but is expected that within a few weeks the service will be in operation. Radio VK3ML will most probably be employed as the S.F. station, and institute members may have their frequency measured by calling this station whenever heard. Watch for further announcements.—Tech. Ed.

In YOUR station, in YOUR brainbox, there is surely something that would interest others. Write it down, and send it along to us. We want YOUR article. WE'LL do the rest. Thanks in advance.—ML.

A chap can be in the ham game for two reasons:—(i.) For what he can get out of it, and (ii.) for what he can put into it. Be one of the latter, and send along an article.—ML.

SILENT KEY.

We regret to announce the death of VK3RQ, who was killed in an accident in the city recently. 3RQ did a great deal of work with crystals, and was instrumental in getting many a newcomer to crystal control on the air. His fist will be missed by all hams, and we wish to convey our deepest sympathy to his relatives in their sad bereavement.

R.A.A.F. Wireless Reserve Notes

VMB

Total No. of Messages 327

Average per Station 46.7

VMC4

Total No. of Messages 333

Average per Station 66.6

4B3

Total No. of Messages 121

Notes and Activities.

Federal Notes by the C.O.

August, 1934.

It is very satisfying for one to go away from the country and return after two months' absence to find the reserve still pushing ahead and activities greatly increased. This was the case during my visit to ZL. It immediately shows that a strongly organised body of operators can carry on and give their district commanders wholehearted support. It also shows that the district commanders have learned to be independent of Federal supervision when it comes to training their own district. Such should be the case when a D/C calls upon his deputy to carry on the work during a period of absence. It is a recognised thing in any service that every man should be prepared to undertake the duties of the man above him at a moment's notice; and this, of course, applies to the reserve. A member should not only study his duties and work, but those he is commanded by also. That is why we have each reservist a section leader for a definite period. He feels that some responsibility is his, and it teaches him to become a leader; it makes him understand what it is like to have 100 per cent. co-operation from his section members, and how it feels when co-operation is lacking. Thus when he goes back into the section after serving his period he is more keen than ever to support the new S/L.

The reserve has established a name for itself the world over. In New Zealand the amateurs were very keen to learn of its activities and doings. They knew a lot about it, and displayed great interest when the organisation was briefly outlined. And we have had inquiries from England as to what our reserve is, and how it functions. No one but the members themselves have been responsible for making this name, and it is the duty of new-comers to work hard and keep the R.A.A.F.W.R. before the eyes of the world as being an enterprising unit recruited from the ranks of the hams.

With new members coming in at various intervals it has made the work of the D/Cs more difficult to cope with. Furthering the training of early enlistments and looking after new ones has proved unsatisfactory. Attention cannot be devoted to two directions, and consequently it has been decided to call for applications for enrolment only every two months. This means that a batch of recruits can be trained to a certain standard together, and then put into a section for advanced training. The months in which applications can now be made are:—January, March, May, July, September and November. All applications are to be made to the Commanding Officer, R.A.A.F.W.R., R.A.A.F. Headquarters, Victoria Barracks, Melbourne.

Before the next issue of "A.R." it is expected that the full membership register will be supplied to all reservists.

SECOND DISTRICT NOTES.

(2ZI—VK2BP.)

The active members in VMB have been hard at work this month, with the very gratifying result that the average number of messages per station stands at 46.71. This district total, together with section VMB3's average of 56.33, and 2C3's excellent effort in originating 81 messages should put VMB right on the spot with the monthly awards in "Amateur Radio."

Notwithstanding a "drive" toward getting VMB's inactive members to keep watches, none of them have done so. However, by the time this appears in print a complete reorganisation will have been effected, whereby all present active members will have been banded together into two complete sections:—VMB1 and VMB2. The non-active members will also have been reallotted call signs, and will have been given two months to decide whether they become active or be recommended for discharge from the reserve.

This step has become necessary, as all four previous sections were broken up, in having only two or three active men in each, whose progress was being retarded by those who either never kept watches or did so about once a month.

Under the new regime VMB will have twelve active members, whose ability to handle traffic is fast approaching "flawless," and when these men settle down in their new sections a contest will be staged, when they will be permitted to prove their ability. However, it should be understood by all active members—that is, the whole six in each section—that they must pull together if the high scores and averages are to be maintained.

2ZI has not taken active part for some weeks, owing to illness but this month's traffic totals have been the best tonic to date. 2Z2 has been

keeping district watches during the indisposiition of 2Z1. 2B2 is maintaining schedules with low power apparatus, and is building up a new receiver.

Traffic.

VMB.—327; average, 46.71.

VMB2.—158; average, 39.5. 2B1, 29; 2B2, 40; 2B5, 46; 2B6, 43.

VMB3.—169; average, 56.33. 2C1, 34; 2C3, 81; 2C4, 57.

THIRD DISTRICT NOTES.

(3ZI—VK3UK.)

The first month of the new reserve year is under weigh, and the first section leaders have settled down, and are doing a very fine job. We have entirely reviewed our present mode of conducting schedules, and are planning a number of big changes. A meeting of all metropolitan stations will be held early next month to discuss the new ideas and views of all members, and thus formulate a plan of action for the coming year. This should not only hold efficiency at a high level, but should also provide many new and interesting phases of co-operative work.

We were very pleased to have 3D1 down here with us for the W.I.A. annual general meeting. 3A4 was going to make the trip, but owing to a number of untoward circumstances arising at the last moment he was unable to be present. 3B6 had a portable away in Gippsland with him during his holidays, but was unable to get on the air very much because of the short duration of his stay.

On July 13 and 14 the inter-varsity chess match between Melbourne and Sydney was put over by 3Z1 and 2B6. Not only were conditions good, but the four and a half hours on each night proved practically QRM-less, which added very considerably to the enjoyment of the "stunt." We have discovered a few chess players in our midst, and I believe that VMB has a few also, so it is more than possible that we may have an inter-district chess contest one of these days!

3Z1 would like to hear of all Interstate reserve men who will be able to get to Melbourne for our VMC convention, which will be held during the first two weeks of November. This period coincides with some of the biggest Centenary attractions, and the fact that all the air race machines will be here should prove an added incentive to those proposing to make the trip. VMC stations from all parts of the State will be here en masse, and it will be a wonderful opportunity to have a reserve and ham get-together such as we have never had before. We can promise that the fun will be fast and furious, so try and make this a convention really representative of all districts.

The leading scores in the VMC traffic contest, which was held last month, were:—3A5, 451; 3C5, 446; 3C6, 309; 3B2, 299; 3C4, 245; 3D3, 140; 3Z2, 110; 3D2, 106; 3E2, 100.

The two leading traffic stations this month are 3D2 and 3D3, each with 83 originated messages.

4th DISTRICT NOTES.

—4ZI—VK4AW.

Since the last monthly report two more members have been appointed to VMD, namely, 4EI and 4NG. Both these members will create activity and swell the traffic totals, as their enthusiasm on amateur bands is very prominent. VMD2 put up the largest section score for the month by the work of 4B1 and 4B3, who work watches at all hours to pass the time away. 4B1 now uses a TCO3/5, and gets CO reports from the B batteries. He intends applying for a transfer to the Western District, partly to provide a large VMD2 net. 4B3 is applying for cadetship in the Air Force, so maybe we will lose him. 4B2 is off the air rebuilding the transmitter, using a 59 as CO and 46's in the PA, and when completed will be one of the most up-to-date country transmitters using petrol engine alternator set in VMD. 4A3 is keeping watches with 4A4, but is finding local power noises and BCL trouble on 4000 kcs. 4A1 has asked to be relieved of S/L duties owing to pressure of business, and 4A2 has no power supply as yet, hence no report this month. 4Z2 has not taken over deputy D/C work yet, owing to business duties, and is going to be very unpopular with 4Z1 if he does not do so shortly! Wednesday watches have been renewed with 1A1, and is very pleasing to hear the C/O on the air again.

Traffic Totals.

VMD.—301; 4A3, 10.

VMD1.—33; 4A4, 23.

VMD2.—227; 4B1, 116. VMD2, with 4 members active, averaged 57 messages per head.

4Z1.—41; 4B2, nil; 4B3, 121.

SIXTH DISTRICT NOTES.

It was with regret that nothing appeared in last month's issue of this mag. Up to then monthly reports had been forwarded by radio, but watches fell through, and as it was too late to send the dope over by mail it had to be left on the hook.

So this month no risks are being taken, and the dope goes into a mail box.

The departure of 1A1 for New Zealand coincided with a lapse of activity in VMF, due to various reasons in most cases which were uncontrollable. For the last few weeks roll-calls have been very poorly attended, but by the time this appears in print activity will be resumed, and VMF will be exercising weekly and mastering procedure as per training manual.

Skip distance plays havoc with keeping in touch with country members, not to mention local QRM from machinery, etc., which makes training problematic. But with the advent of 6A1 coming on the air again from Northam, this may be partly overcome. The following comments will give an idea of the doings of members.

6Z1 has been planning a lengthening of his shorter stick, and this will be eventuated next week-end, when the 28-footer will shoot up to 54 feet.

6Z2 has been suffering from a bad attack of flu, which has curtailed his usual activities.

6A2 fell victim to the prevailing germ, too, and coupled with another spasm of rebuilding has made a retreat into his shell, but promises an R9 comeback in a few days.

6A1 has got settled down in his new quarters, passing the time of day (and night) at the new B class BC station at Northam. Didn't take long to get a bottle perking, though, and resumed watches in record time.

6A3 was heard one watch, and then the local golf club claimed his attention to play some matches. Ears are strained weekly to hear if he has resumed watches. A few miles away from 6A3 a new member has just received his call, namely, 6A6. Word being awaited for this newcomer's announcement of going on the air.

6A4 was unfortunately delayed in getting his gear together to make a start, but keeps in touch with marked enthusiasm, which makes us wish he was on the air.

6A5 is troubled with local QRM., and cannot get a signal above noise level on the 80 band.

Skip kills 40. So 6Z1 is scratching around for 500 watts to overcome the difficulty (oh, yeah). Thus endeth the doings of VMF's eight members. A few prospects are hovering in the offing. It is rumoured 6B0, who has been marooned in Carnarvon for a while, is going to shift to Perth. He will be enlisting if that is the case. Then there is 6FL, now at Albany. He has not managed to get a bottle perking yet. Had trouble with power, but, like a true ham, shifted to a new QRA within cooee of 440 DC supply, and got masts hoisted. So there will be one new member shortly. The Wiluna gang, which includes at least three hams headed by 6FM, keeps mighty quiet, and information of their activities is as scarce as rain in VME. One would think that we would hear more of them.

Who said traffic totals? The gang here have qualified for the booby prize! Wait until next month, though. Our totals may surprise you.

USEFUL DATA.

To those of our readers who have not yet purchased the Radiotron Designer's Handbook, which has been made available by Amalgamated Wireless Valve Co. Ltd., we would strongly recommend immediate action. This book is so popular that another edition has been made available, and the information it contains is of definite value to every man in the game.

The contents, briefly, consist of: Formulae; Calculations; Transformer and Circuit Design Values; Valve Characteristics; Wire Tables; Charts, etc., etc.

Some of you, doubtless, have some of the information already in your text-books, but to our knowledge there is no other publication available with so much of this useful information packed in the one issue.

Priced at 1/6, copies may be obtained from the Magazine Committee upon application. or by writing to Amalgamated Wireless Valve Co. Ltd., Fourth Floor, "Wireless House," 167 Queen street, Melbourne.

STOP PRESS.

As we go to press we learn that Vaughan Marshall, VK3UK, is on the sick list, and has been ordered a complete rest by his doctor. As Vaughan is a very enthusiastic member of the magazine committee, we all wish him a speedy recovery.

Owing to the lateness of arrival, notes from the Waverley Radio Club and Zone 6 A.R.A. have been held over until next month. Correspondents are advised that copy must be in not later than the 20th of the month.

"PORTABLES"

By 2NS and 2YB.

Some time ago Trevor Evans (VK2NS) and Bill Lewis (VK2YB), who are both enthusiastic motor cyclists, conceived the idea of using portable radio in conjunction with the Australian tourist trophy motor cycle races, which are an annual event in the Bathurst district of VK2. When the idea was put to the Auto Cycle Union it was received with much acclamation, hence many "skeds" and much discussion between 2NS and 2YB.

The course on which the races are run is a road circuit, approximately seven miles around which is made available by the local shire council, and it was decided to place one portable about half-way round the course for the purpose of signalling the numbers of the riders as they passed on each lap. These numbers were passed on to the public address system announcer, thus keeping the spectators in touch with the progress of the races when there would otherwise be a dull period while the riders were out of sight. Although, fortunately, it was not necessary, it was also an important link with the race officials to call assistance in case of accidents.

The necessary gear was supplied by 2NS (he being located at the scene of operations), and consisted of two transmitters and two receivers. For the end where the P.A. system was installed, and where A.C. lines had been made available, the transmitter was a Hartley with 350 volts of R.A.C. to a 205d valve and the RX was an E.C. job, using a 57 and a 2A5. This was operated by 2NS as his machine was entered in the handicap race, and he naturally wished to be handy to arrange things for his rider. The other end, which was operated by 2YB, was battery operated (2200 volt mains run close handy, but who wanted them?) Hi. This transmitter was also a Hartley, using a 201A supplied with 180 volts from four blocks of "B" batts. The receiver was a three-tube (detector and two audio), with only 45 volts on each tube. Both skywires were of the A.O.C. type, each being supported at the free end by a 20-foot piece of hardwood tied to fences. Hi. Small aerials (about 15 ft. long and 3 ft. high) were used on the receivers, and since the distance airline was only

about two miles and the PDC (Hi) sigs were R3 very FB break-in was used throughout.

To ensure accuracy, break-in was almost essential, as it only took the riders about three minutes to cover the distance between the stations, consequently stragglers would still be passing 2NS, while the leader was passing 2YB, and with the resultant QRM queries were sometimes necessary. 2NS swears that it is much easier to copy South Africans than to copy our R9 sig through the QRM from a bunch of well-tuned TT replica "Rudges" and the international "Nortons" doing some 80 m.p.h. with straight-out exhausts. Hi.

Early in the day 2VJ arrived to view the races, and was promptly appointed second op. to 2YB, and did very good work checking riders' numbers, and keeping small boys from the line of vision; also rounded up a pup which wanted to investigate the R.F. in the transmitter, Hi. Another "ham" to put in an appearance was 2OD, who paid 2NS a brief visit.

A violent and somewhat monotonous form of QRM was prevalent from gentlemen who would rush to 2NS when he was endeavouring to copy a batch of numbers from 2YB, and wanted to know "who won the Doncaster?" or "could he listen to the description of same?" Alas, after Trevor's somewhat colorful reply they would wander sadly away, never to return.

The two stations were in operation almost continuously from 9 a.m. to 5.30 p.m., and statistics show that over 800 numbers would pass 2YB in that time. In one race there were 46 entries ,and the "ops" were certanly kept "opping" when these came through in bunches.

At the conclusion of a very FB day it was unanimously agreed that "ham" radio had added greatly to the interest in the races for the spectators as well as giving the operators some experience of operating under open-air conditions.

Should any reader have heard either of the stations, both operators would greatly appreciate reports, even though the reports are somewhat belated. 3.5 mc. was the band used, and many Interstate and local hams were heard during the day at strength varying from R6 to R8 on the small aerials. Owing to being very QRL no time was available for QSO's. CW was used in preference to phone, because of the aforementioned QRM, hi.

New rooms having been secured for the headquarters of the Victorian Division, it was decided to vacate our old rooms on Saturday, July 28, and members who took part in the rather big job of moving all the gear had quite a hectic time. Work commenced at 1.30 p.m., and by 7 p.m. everything had been transferred to the new building, the W.I.A. being greatly indebted to Mr. Kinnear, who very kindly made available the use of a motor truck and block and tackle and ropes with which the aerial masts were dismantled from the top of a six-storey building, and hauled up to the roof of the new building, also six storeys. The following members unselfishly devoted the whole of their time on a Saturday afternoon in the interest of the institute:—3KN, 3TH, 3UK, 3WG, 3ML, 3XR, 3NY, 3PS, 3XJ, Mr. Fred Rees, 3DH, and several other transmitting members and members of the short-wave group, whose names are not known. Another working bee will be held at the new rooms, 191 Queen street, on Saturday, August 11, when the masts will be erected.

SOLVING YOUR INSTRUMENT PROBLEMS

Amateurs are invited to submit to us their problems. Stocks are available to meet all requirements.

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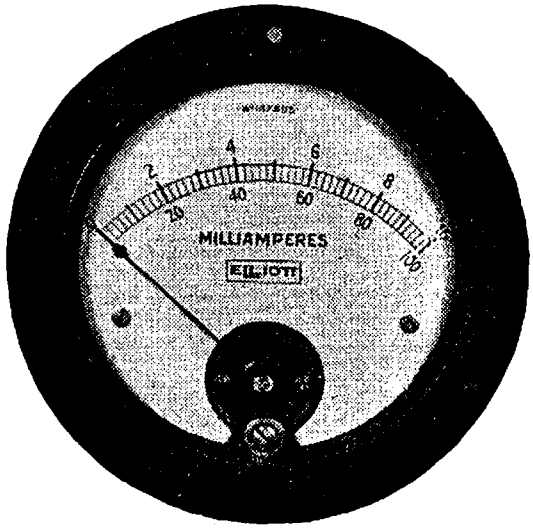

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AMATEUR RADIO

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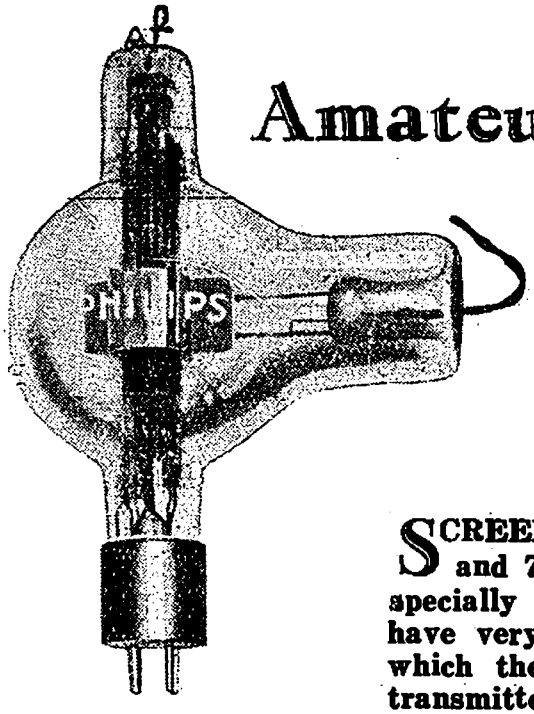
Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

Screen Grid Valves
For
Amateur Transmitters



½ of actual size.

Types:
QB 2/75, QC 05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for nse by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A.

Type.	Screen Grid Valves. QC 05/15.	QB 2/75
Filament voltage	4.0	10.0
Filament currant*	1	3.25
Saturation currant*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam of bulb	50	100
Max. length	160	210

*Approximate values.

PHILIPS
TRANSMITTING VALVES

Editorial

W.I.A Facilities

As the Victorian division has opened their new rooms amid great rejoicing on account of increased space and general convenience, we feel justified in outlining some of the facilities extended to members.

One may frequently wonder just what value the W.I.A. is to hams generally, and we may with satisfaction point to our library of instruments and books, our power for unified effort in all directions affecting the amateur, including a degree of self-government otherwise impossible, our ability to run a magazine, organise contests and conventions, including dinners etc., secure handsome prizes, and control the dissemination of knowledge to future "hams" through our A.O.P.C. classes. Added to these may be coupled the work of the R.A.A.F.W.R., the phone band allocation committee, the QSL bureau, the good fellowship to be found at all section meetings, and last and by no means least is the direction and maintenance of a recently inaugurated policy of experimentation of the ultra-high frequencies. Also, by the way, the A.R.R.L. will not issue a W.A.C. to any person unless he is a member of the W.I.A. or affiliated body.

Furthermore, the Radio Inspector's Department will not consider any applications for power permits unless such applications are endorsed by the Wireless Institute of Australia.

Contest

All the section notes this month indicate the satisfactory interest being shown by members of the W.I.A. and A.R.A. in the coming Centenary contest.

The effect of such a contest upon "ham" radio, apart from the establishing of better feelings among the gang from an international point of view, is the improvement being obtained through attention and experimentation with aerials and equipment suitable for such a contest.

Our magazine contains a further series of articles this month, which will be of some help as suggestions to an improvement of our chances of success.

The prizes which have been so generously donated are more than worthy of the attention of all "hams" worthy of the name throughout Australia.

Members' Subscriptions

As subscriptions for the year 1934-5 are now due, members will do well to renew their contributions to the funds as soon as possible.

As a concession to old members of the Victorian division for the time being unfinancial, it has been decided to continue the issue of AR until the September issue.

As we have a new year before us it is a most opportune time to enrol new members.

Is there some "ham" new or old within visiting distance whom you could call on and add to our growing list of members?

Checking the Performance of the P.A.

Unfortunately, there are one or two measurements in R.F. work that the bam is not in a position to actually make by calculation or direct measurement owing to lack of data and instruments. Then again, he has to put up with a lot of "cut and try" methods because some things don't work out in practice as they do in theory. After all, that is what a ham is always doing, and that is where his fun comes in—by repeatedly experimenting with some gadget.

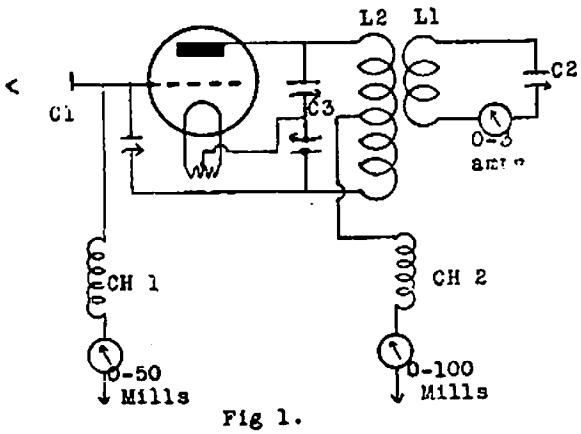


Fig 1.

One of the determinations referred to above is the measurement of the excitation given to any power amplifier from its preceding stage. We have several figures given us. Some say that the power input to a driving stage should be one third of that put into the P.A. These figures seem to wander according to various authors, and we could do well to try out a test for ourselves.

Everybody realises that excitation controls the output of a tube, and naturally a tube could be one of three things: (a) under excited, (b) fully excited, or (c) over excited. We are, of course, aiming at (b) for highest efficiency. The following method is perhaps not the most accurate, but will be sufficient to show up which class a P.A. comes under.

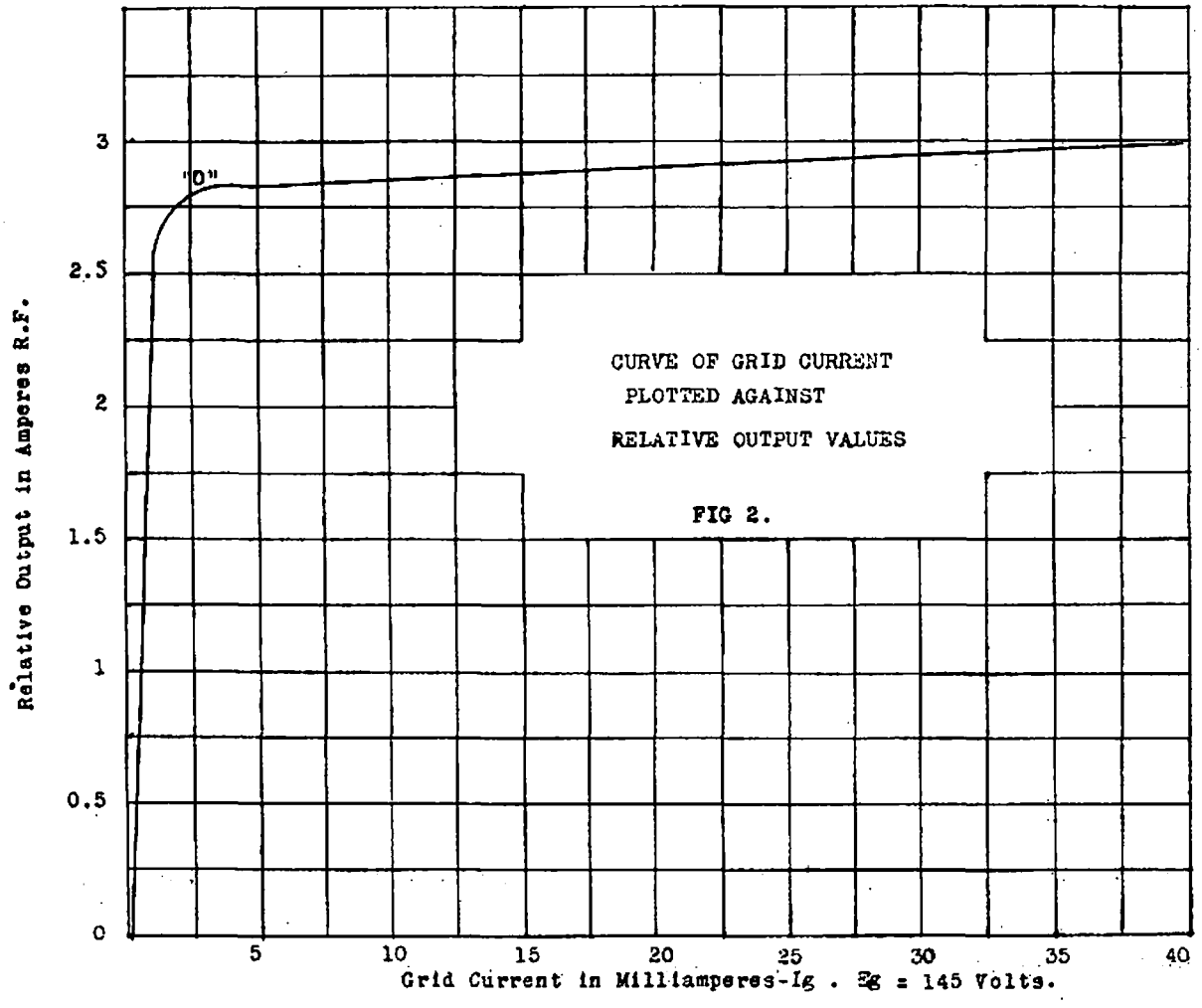
The tube chosen for this test is a Philips TC1/75 and is being driven by a TBO4/10, as a buffer stage. Throughout the determination we are not concerned with any other stage than the P.A., and once they are tuned to their maximum, output can be neglected. The instruments needed now are (i.) an R.F. ammeter of 0-3 or higher, and (ii.) a 0-50 milliampere D.C. meter. Figure 1 shows the connections of a modern power amplifier properly neutralised. The components are standard with the exception perhaps of the excitation feed condenser C1, which could be a 23 plate midget. A variable condenser is necessary here because we desire to vary the feed during the test. The output circuit consists of a coil L1, condenser C2 and the R.F. Meter 0-3 amps. The 0-50 milliamperemeter is inserted in the grid bias lead after the choke CH1. The plate meter occupies the usual position after choke CH2. The constants for the tank circuit L2, C3 and the output circuit depend on the frequency chosen for the test. However, let L1 and C2 be a combination that will tune to the frequency desired.

With the aerial disconnected, the P.A. is tuned to resonance by C3. The output circuit is now loosely coupled to L2 and is tuned by C2 to resonance with the tank frequency. Care should be taken in doing this because too tight a coupling will surely burn out the 0-3 amp. thermometer. The coupling should be varied in position until full scale deflection is arrived at, i.e., the needle is over 3 amps. Assuming now that we have a constant drive, and plate voltage, we can go ahead and carry out the test. The two latter values, by the way, were 150 volts bias and 1200 volts H.T. in my case, with the P.A. operated as a "C" class amplifier. Leave the power on and proceed as follows:—

Having a pencil and paper handy, record the readings of the R.F. meter, the grid meter, and, as a matter of interest, the plate meter. Now decrease the excitation by opening out C1 until the grid current has dropped

10 mills. Again read the meters and note. Repeat this operation in 10 milliampere steps until the grid meter reads about 10 mills and then proceed in 2 mill steps, all the time noting the readings of the meters. When the grid meter and R.F. meter are at zero, repeat the operation, this time increasing the excitation until the R.F. meter is again at 3 amps. If the results compare favourably with those obtained the first time, then switch off the power and commence plotting the meter readings. For this you only need either a piece of graph paper, or, if none is handy, a piece of writing paper ruled off into half inch squares. Mark the grid current readings off along the bottom, as in Fig 2, and R.F. meter values along the vertical axis. Commence plotting the readings recorded and when finished, draw a line and connect all the points. A curve like that shown in the graph should result. For those unfamiliar with the plotting of graphs, it is done in this way. Take the grid current reading when the R.F. meter showed full scale deflection and locate it along the bottom axis. Then run the finger up that line until you come to the R.F. meter value recorded, corresponding to that value on the vertical axis brought across with a finger of the other hand to where the two fingers meet. At this point mark in pencil with an "x". Continue thus until all readings have been plotted. Then connect them up with a pencil line.

We are now in a position to see what this graph means to us. Figure 2 shows that an increase of grid current from 2.5 mills to 40 mills has increased the relative output readings from about 2.755 amps. to 2.85 amps., showing that a large amount of power is being expended in exciting the P.A. for a very small percentage of increase after the full-excitation period has been reached. On the other hand, from zero grid current to about 2.5 mills we have the output increased from 0- to 2.755 amps., a terrific increase for such a small variation of grid current! An inspection of the curve tells us that the tube is under-excited until the top of the curve is reached and from there on,



CURVE OF GRID CURRENT
PLOTTED AGAINST
RELATIVE OUTPUT VALUES

FIG 2.

where it begins to flatten out, power is being wasted and the tube is being over excited. The point that one should work at is that point just at the top of the curve just before it begins to flatten out; shown at "o" in Fig. 2.

Should you be unable to make this curve tail off, as in this example, but find that it still continues on straight up, then you will want more excitation still. All fully excited P.A.'s should give a curve like this one, and if yours is doing this then you are getting pretty high efficiency.

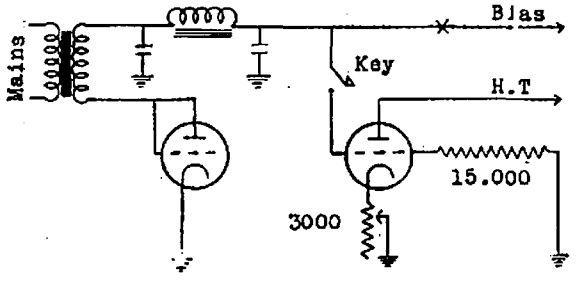
It is likewise interesting to plot the plate current readings against the R.F., and also the grid current readings. They tell a similar tale and provide an interesting half hour's entertainment, perhaps, if only for enlightenment!

Efficient Keying

By VK3AH.

For the elimination of chirps and the protection of filter condensers, a bleeder resistance is very nice, but when the hopeful op sits on the key and sends the juice up into the transmitter, the bleeder unfortunately keeps right on doing its stuff and succeeds admirably in making away with a few watts which might as well be going into the 199, 852 or what have you.

The arrangement to be described was rigged up in order to put the HT mills where they belong when the key is pressed, and in addition acts as a bias eliminator incorporating blocked-grid keying.



The rectifier for the bias eliminator may be any valve with a few mills emission left and its filament may be supplied from the same source as the valves in the transmitter as the filament is at earth potential. For the mains transformer, an old audio-frequency transformer of approximately 1 to 1 ratio is o.k., while the filter choke may be the primary of another AFT. The bleeder for the bias eliminator must be capable of carrying, not only the few mills from the bias supply, but also the grid current of the PA and FD, and may be a 15,000 ohm voltage divider. Any handy filter condensers are suitable.

With such a bias eliminator it was found simple to cut out the ordinary bleeder across the HT and make a spare valve do the job more efficiently by having it bleed only when the key is up.

A glance at the circuit diagram will show how this valve is made to function. The plate is connected directly to the positive side of the HT supply, while the filament (which must be lit from a separate source) goes through a variable, wire wound resistor of approximately 3000 ohms to earth. This latter resistor is used to limit the bleeder current going through the valve to any desired amount.

In operation, with the key down, the bleeder valve is sent to cut off, while the PA grid current flows down through the bias bleeder. When the key is up, the bleeder valve starts bleeding, while the grid of the PA is not only given a high negative charge, but is virtually isolated from earth.

The usual condenser and resistor combination is used across the key to cushion out any slight clix that may be present.

If the bias supplied by the eliminator is not enough for the PA or FD, insert a suitable resistor or a battery at point x in the bias lead, while if it is too much, decrease the value of the bias bleeder resistor. Tapping this resistor doesn't work.

Effective Radiation

By VK4US.

The antenna is the most important part in a transmitting station, and particular care should always be taken in its construction, if good results are desired. The usual antenna seen at 90 per cent. of the modern ham stations is the common "Zepp." The new ham erects a "Zepp" because everyone uses it—it is easy to erect and tune, and because he is too lazy to figure out its advantages or disadvantages.

He erects his "Zepp," and then with different inputs tries to work DX. If with, say, 30 watts input he can't raise DX, he blames his locality and promptly raises his power, never taking the antenna into consideration, which, once it is erected, generally remains a fixture. There are many important phases, such as impedance matching and radiation angle, etc., to be taken into consideration when erecting an antenna. Location, height of poles, etc., are also of importance.

Let us take impedance matching, which is an angle of antenna construction very rarely looked upon by most hams.

The usual impedance of the half-wave Hertz flat-top, used by most hams, is about 75 ohms. This, of course, varies with locality and proximity of buildings, trees, iron roofs, etc., but it is near enough to take it for granted. Now we have our 75 ohm flat-top, the next stage is to get some type of feed system which not only suits our locality, but also our tuning system and transmitter, and, most important of all, to match the impedance of the flat-top.

Quite a few of the hams using the "Zepp" antenna—and with an input of 25 watts—have, no doubt, often wondered why they don't get out better. The reason is simple. They are not matching the impedance of their feed system to that of the flat-top, Therefore, radiation losses occur.

The impedance of the standard "Zepp" feed, 4-inch spaced, and using 14 gauge feed wires, is approximately 450 ohms, so you can see what a hopeless job it is of ever matching that impedance to 75 ohms, no matter how they tune. The obvious remedy for this is to cut down the space between the feeders. This can be done down to spacers of about 1½-inches, when the impedance is about 210 ohms; but to cut them down any further introduces bad capacity effects, harmful to the efficiency and to the radiation percentage, and also causes bad harmonics. Thus, with the usual "Zepp" feed, a loss of at least 50 per cent. of the antenna input is incurred, and only 50 per cent. of the input is radiated from the flat-top. Of course, there will be less if radiation resistance, etc., are taken into consideration.

Next there is physical or effective radiation to be taken into consideration. If the radiation is only physical—that is, if the flat-top is not high enough above such objects as trees and roofs to prevent their having any effect on the radiation by their absorption, one will need a very efficient matching system before one can have any definite radiation angles or directional properties whatsoever. It will now be seen that under these conditions a "Zepp" or Marconi will not perform well at all, and that "brute force" (high power) will be needed before DX can be worked with any degree of efficiency.

If the antenna system is efficient, it will be surprising how easily DX can be worked on a QRP. For its radiation to be effective, the flat-top (if horizontal) should be at least 50 feet above objects which are likely to bring about absorption. In this case, a "Zepp" will perform quite efficiently, provided a bit of power is used, as it will have very definite directional properties and radiation angle, and, if it is horizontal, it will be directional at right angles to the flat-top. Thus, if the antenna was running north and south, its greatest

radiation would be east and west, and also straight up towards the sky and down to earth. This holds good for all horizontal flat-tops whose radiation is effective. Therefore, for an antenna system whose radiation is only physical, the radiation will occur mainly straight up and down, and to get any results at all an efficient system is necessary.

The directional effects of an effective horizontal radiator can also be altered by varying its radiation angle. Suppose our flat-top again runs north-south, now the greatest radiation (as stated above) is east-west, but in order to get good reports from the north the angle of radiation has to be altered, and it will be found that by lowering the north end of the antenna the radiation angle becomes lower and the direction is changed towards the north. Conversely, when the high end is in the north, it radiates towards the south. Thus the ham who is limited by the size of his land to the use of one antenna can make it a fairly good omni-directional type.

Now, if the antenna was one which had an effective radiation, very little success would be achieved, as an omni-directional antenna, a vertical one, would be the more effiicient, and, if the high poles necessary are available, it is well worth the trouble and expense incurred in erecting one.. It is the only type of radiator that can be classed as omni-directional. As the radiation is at right angles, it will radiate in all directions, and there will be practically no losses skywards, etc., and as all radiation is at a low angle to the earth's surface, greater distances can be traversed, and skip distance effects will not be so apparent as with a high angle radiator.

Having discussed impedance matching, angle of radiation and directional effects, it will be seen that one antenna in most cases has to serve all purposes. For the ham whose power is limited, we suggest a vertical or else a very high horizontal antenna for efficient DX working, and if he has no facilities for the erection of such an antenna he should match his impedances well, so that he can get the last ounce of power into his flat-top without having any wasted in radiation or absorption.

Special antennae are necessary for impedance matching, the first being the using of impedance matching transformers, but these cause a bad sag in the centre of the antenna, owing to their weight. Then there is the single or double wire feed-tapped "Hertz" antenna. The advantages of these antennae are obvious, but the disadvantages are, of course, as in all systems, prevalent. The main disadvantages of most impedance matching systems concern those using self-excited or M.O.P.A. transmitters, as these radiators only resonate effectively on the frequency they are cut for. Another of their disadvantages is that the transmission lines should not be bent back under the flat-top, nor should the feeders have any sharp bends.

For the ham who has the facilities for antennae such as these, he would be well rewarded for his trouble, as the impedance of the feed lines are in perfect match with the flat-top. This means that there will be no standing waves on the feeders and the only radiation will be through the medium of the flat-top itself. The length of the transmission lines can be any convenient to the user, and they are untuned.

The necessity for a simple impedance radiating system which does away with most of the attendant disadvantages will now be seen. The "doublet antenna," using twisted flex feeders, is the very thing. The feeders can be any convenient length, and the impedance will be approximately 118 ohms for the standard lighting flex, which, as you can see, constitutes a fairly good match to the 75 ohm doublet flat-top. About 45 per cent. more power will be radiated from the flat-top than if 2-inch spaced "Zepp" feeders were used, which as can be seen, means a big increase in signal strength at the receiving end. Another great advantage to those whose shacks are only in a position to use the standard voltage fed systems is that the flex feed can be bent back under the antenna, or twisted around corners, without introducing any ill effects, and the radiation will be practically nil.

Any one of these impedance matching radiators will result in a great increase in output if used in the place of the obselete Marconi or "Zepp," even if the radiation of the antenna

is only physical. The ideal system is obviously either a high horizontal matched impedance radiator having facilities for a variable radiation angle, or the one and only really efficient all round antenna—that is, a matched impedance vertical antenna.

All the modern commercial short-wave stations are installing vertical antennae on account of their properties of low angle radiation and their being the only simple, omni-directional radiating system. As the power input of the majority of Australian hams is 25 watts, it is all important that, in order to get greatest radiation from their antennae, efficient radiators must be installed. It is impossible under any circumstances to get any more than 47 per cent. of the input on to the flat-top of a system using "Zepp" or Marconi types, owing to the bad impedance match, but with a well constructed "doublet" system, at least 85 per cent. of the input goes to the flat-top, and the amount and direction of the radiation depends on the effective height, or whether a vertical antenna is used.

Most hams who have any foresight at all will see the strength of these arguments, and it is to be hoped that any newcomers will not erect the antiquated "Zepp" because VK? gets good DX results with it.

DX in October

By Maxwell Howden, VK3BQ:

This month is by no means regarded as the best DX month, but since the majority of the Centenary events are being staged at about that time it was considered advisable by the Contest Committee to hold it at that time. In past years the forty metre band has been quite good, but as a rule, the twenty metre band, which we must consider more especially from the QRP man's point of view, has been very dead. There is always the chance, however, that the Englishmen and Europeans will thoroughly test this band, and should they do so it is reasonable to suppose that the twenty metre signals from them will reach us between 11 p.m. and 1 a.m., as they do slightly later in the year. One must also remember that at usual times the stations in other parts of the world do not get on the air to any extent at times when their signals are likely to reach us, and though there is no record of the South Africans coming across on twenty metres during our afternoons they should do so as well as they do during the B.E.R.U. contest.

Looking up the logs of the last couple of years shows that the majority of the DX for October has been worked on the forty metre band in the early hours of the morning, though, of course, the W's can be worked with the usual ease right from the early afternoon onwards. The 1932 log shows contacts with FM8IH, F8RJ, HB9Q, F8YD, EAR185, EAR250 and W2BOD between the hours of 6 and 7 a.m. on the two mornings I was on the air. Conditions in the same month in 1933 showed a great improvement, and at the same times the stations I1IP, I2UE, EAR226, CT1BG, CT1AA, EAR185, EAR224, AC2MJ, ZS2A, CT1IH, G5VM, PAOWR, FM8CR, F8AF, F8PK, G5FV, G2BY, G2GA, G2ZQ and many others were heard and worked. It was during this month also that VK3KR worked FM8CR and earned his long coveted WAC. At the present time quite a number of Europeans are coming in in the afternoons on forty, and they should still come through fairly well in five weeks' time.

IMPORTANT

Financial country members of the W.I.A. must make application for renewal of phone allocations before September 14th.

Members are reminded that this issue is the last to be forwarded to unfinancial members.

Two Economical Power Supplies

By VK3ML, Technical Editor.

Those who make a habit of thoroughly examining all interesting articles in QST could not have failed to notice, in the April, 1930 issue, under "NKF Experiments above 28 Megacycles," a practical and economical method of obtaining C bias voltage from the cyrstal-oscillator H.T. transformer. This method has been in use at 3ML for three years or more with great success.

The article quotes UX866's as the rectifying valves, but with only an alteration to the filament voltage the circuit is adaptable to type '81s. Fig. 1 shows the systematic wiring of the supply which gives both plate and grid voltage. Type '01a's have been used with success as the grid voltage rectifying valves, but any half wave valve may be used, of course. The usual filters are required, but are not shown in the diagram for simplicity's sake. Plate and grid voltages up to 500 volts may be obtained by this method.

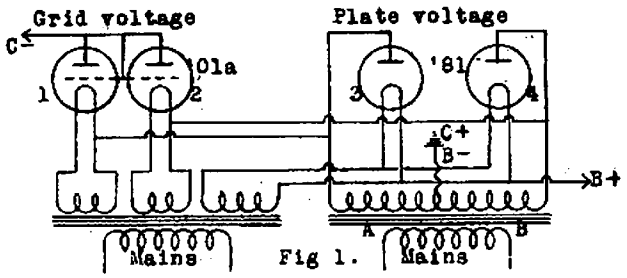


Fig 1.

It will be observed that the high voltage transformer serves to supply both B and C voltages, and the operation, as explained in QST, is as follows:—"On one half of each cycle, when the end 'A' of the transformer is positive, the tube '3' passes plate power and tube '2' passes grid voltage. On the other half of the cycle, when 'A' becomes negative and 'B' goes positive, tube '4' passes plate power and tube '1' passes grid voltage for the transmitting tubes. Each rectifier operates full wave, with two tubes connected to the same end of the transformer winding, working on opposite half cycles. Two separate filament windings, well insulated from each other, are necessary for this type of grid bias supply, since the two filaments are connected to the opposite ends of the high voltage winding, and are always at high potential difference with respect to each other as well as to ground."

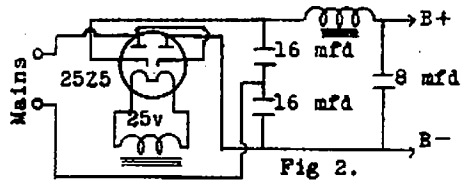


Fig 2.

Fig. 2 depicts another satisfactory and proven idea for obtaining C.O. H.T. power from the A.C. mains without the aid of an H.T. transformer. Working as a full-wave voltage-doubler, the tube used, a 25Z5, delivers ample voltage for any C.O. This tube was primarily designed for obtaining D.C. voltage from the A.C. mains in "universal" receivers, without the aid of any transformers. As the characteristics are:—

Heater voltage—25 volts

Heater current—0.3 ampere

A.C. voltage per plate (RMS)—125max volts

D.C. output current—100max mills, it is obvious, when used on 200-240 volt mains, that care must be exercised in the design of the voltage-doubler unit. Instead of, or as in the "universal" receivers, heating the heater direct from the mains with the aid of a dropping resistor, the use of a heater transformer delivering 25 volts at 0.3 amp. is recommended. By this, one can heat the tube up to its operating temperature before applying the high voltage, thus minimising the chances of internal breakdown.

The higher the capacity of the filter condensers before the choke, the higher the D.C. voltage output and the better the regulation. Two electrolytic condensers in parallel totalling 16 mfds formed the condenser bank for the experimental voltage-doubling unit tried out, giving 350-390 volts D.C. output according to the loads and line voltage.

Many uses could be made of such a unit besides the above. As a "C" bias supply for grid-blocking keying systems may be cited as an example.

Operating and Experimental Section

Conducted by VK3WY.

"What's in the Ether"

If a census were taken of the various branches of radio that individual hams were interested in, there is no doubt that DX would take a high place. It follows then that a section in Amateur Radio devoted to DX conditions would be of considerable value.

It is no doubt possible to get a considerable amount of DX by more or less haphazard working, but to obtain optimum results systematic planning and working is necessary. The bands have to be watched for DX that may show up for only an hour or so each day and after a few weeks disappear altogether. In short, it is really necessary to keep track of conditions on all the bands during the whole 24 hours. This may be all right for anyone who has the necessary time and endurance, but it becomes an impossibility for the majority of us who have to work now and then. In this case, as in many other cases, however, that which cannot be achieved by the individual may be achieved collectively. We cannot each follow conditions completely, but between us there should surely be no difficulty in doing so. If we each contribute our own observations it is only necessary for them to be correlated in a published "whole" to make available a complete story for all interested. This, then, is the object of this section.

It is necessary for the success of this new section that logs should be sent in from the different states giving details of DX worked or heard. These logs should show the date, time and band on which DX was worked, and it is hoped that in future issues the best logs for the month may be recognised by some type of an honorary award, and it is our intention to publish the best log for each month. The necessary data is as follows: Date, time (E.S.T.), band, station worked and signal report. The period should be from the 12th of one month to the 12th of the next.

28 and 56 M.C. Section

Conducted by VK3JJ.

It is now many years since the first experiments in Australia on wavelengths between five and ten metres took place, and it is surprising that so little use has been made of the two bands in these regions allotted to us.

Are we doing justice to the 6000 K.C. of space available?

The small amount of activity on these frequencies has undoubtedly been caused by the lack of organisation and scarcity of news as to the doings of Amateurs in the neighbouring states. Under the new scheme put forward by the Magazine Committee, in which each division appoints one man to arrange tests and supply information, it should be possible, through the medium of "Amateur Radio," to keep more in touch with one another, and the foregoing difficulties should be greatly overcome.

In other parts of the world, a vast amount of work has been done on 56 M.C. in recent years, and with the aid of the super-regenerative receiver, it has been converted into an excellent phone band for local contacts, and is eminently well suited for 'plane and field communication. This band has received a little attention from Victorian hams at various times, but so far as is known results have been somewhat disappointing, and although signals have been very strong in the vicinity of the transmitter they rarely carry over more than five or six miles of suburban buildings. From all accounts, results have been better in other States, and we understand there is a regular 56 M.C. network in Sydney. However, there are several good locations on the hills within 30 or 40 miles from Melbourne, which offer wonderful opportunities for field work when a few portable sets have been constructed.

A small group of amateurs in all States starts up on 28 M.C. each year;

usually from September or October, to take advantage of the summer conditions, and always finds it easy to work over distances varying from 500 to 2000 miles. Present indications seem to point to a repetition of previous years for Interstate work, but it is unlikely that any DX results will be obtained, owing to the eleven year cycle being at its lowest peak with regard to short wave communication.

In thinking of ten metres as a potential CW DX band, we must not lose sight of the fact that it is much more suitable for "cross town" phone communication than 56 M.C., providing super-regeneration is used in the receiver. In the rush to five metres on the other side of the world, this fact seems to have been overlooked, so here is an excellent chance for Australian hams to lead the way with ten Mx. phone.

As the ground wave on ten metres generally seems to travel up to about 25 miles, there is no reason why it could not be used for much of the local phone "rag chewing" at present carried out on 7 M.C., thus leaving 7 M.C. more clear of QRM and developing 28 M.C. at the same time.

The usual gear used for CW on the lower frequency bands can be quite easily altered for 28 M.C., and for phone the only additions necessary are a unit for quenching the detector and a deep system of modulation. The 7 M.C. "Zepp" antenna can be used with quite good results.

For 56 M.C., special gear will be needed, and for an excellent description the newcomer is referred to the article by VK2XY in a recent number.

To make these bands a success, it is necessary to have as much news as possible on unusual contacts, conditions, descriptions of gear, and, most important, technical articles.

A representative of this section should have been appointed by the Divisional Council by now, and all enthusiasts should immediately communicate with him for full information on this section.

N.S.W. NOTES.

Representative, VK2YC.

From VK2YC, the suggestion is made to split 28 and 56 M.C. work into two sections, as there is a 56 M.C. group already formed, including 2PT, 2WD, 2NO, 2MW, 2DW, 2WE, 2SA, 2HU, 2XY and 2GS.

On 28 M.C., the most consistent are 2XY, 2BX and 2YC; but no doubt 2HZ, 2HY, 2NO, 2BD, 2SA and 2ZW, all of whom were active last year, will be among the starters this year.

The first ten metre contact this season was between 2XY and 2YC during August, this being 2YC's 72nd QSO on the band. Please forward ten metre notes to VK2YC.

VICTORIAN NOTES.

Representative, VK3JJ.

No signals have been heard on 56 M.C. for months now, and as far as I am aware no stations are at present operating there. It would be interesting to again hear VK3RS, whose phone transmissions on this band were the most successful in the tests carried out last year.

On 28 M.C., the outlook is more hopeful, and during August both 3NM and 3OF were heard. These two had no difficulty in making contact, the signals from 3NM being R6/7 here, with a good DC Crystal note. 3OF was using a pair of 245's in push pull with about 50 watts input, and was very strong, but the note was a little on the rough side.

Others that have decided to start up shortly include 3HK, 3BQ, 3DM, 3CP, 3YO, 3JO, 3CS, 3PX, 3XJ, 3BJ, 3DT, 3RJ, 3CW, 3WC and 3JJ. Most of them had plenty of experience on ten metres, and several will be using crystal control. 3NM and 3OF will be on the lookout each Sunday morning for locals, and the interstate signals which are expected to come through any day now.

TEN METRE TESTS—ALL STATES.

Schedule, 9 a.m. to noon, Sundays.

It is hoped to arrange Interstate and New Zealand tests to be held during November and December.

Any suggestions, please?

Harmonic

Advice has been received that VK5PK and VK5FB are to set sail per auto on September 29 on a long tour via Mildura, Wagga, Canberra and Sydney to Newcastle, and return via the South Coast road to Melbourne, arriving to celebrate the Centenary on October 20. Just take care, you hams along this route, these Croweaters are liable to drop in on you from a great height any moment. Best luck, OMs, and you will find yourselves very welcome where'er ye go.

New and Revised Q Signals

At the Madrid Conference, the Q signals were revised and all alterations are listed below. In addition, the abbreviations QRE, QRF, QSC, QSE, QSF, QSH, QSI, QSQ, QTK, QTL and QTN have been deleted, in most cases being incorporated in one of the revised abbreviations.

Abbreviation.	Question.	Answer or Advice.
QRD	Where are you bound and where are you from?	I am bound for.... from....
QRH	Does my frequency (wave-length) vary?	Your frequency (wave-length) varies.
QRI	Is my note good?	Your note varies.
QRV	Are you ready?	I am ready.
QSD	Is my keying correct; are my signals distinct?	Your keying is incorrect, your signals are bad.
QSG	Shall I send....telegrams (or one telegram) at a time?	Send .... telegrams (or one telegram) at a time.
QSK	Shall I continue with the transmission of all my traffic, I can hear you through my signals?	Continue with the transmission of all your traffic, I will interrupt you if necessary.
QSM	Shall I repeat the last telegram I sent you?	Repeat the last telegram you have sent me.
QSU	Shall I send (or reply) on.... kc/s (or m) and/or on waves of Type A1, A2, A3, or B?	Send (or reply) on....kc/s (or ....m) and/or on waves of Type A1, A2, A3 or B.
QSV	Shall I send a series of VVV ....?	Send a series of VVV....
QSW	Will you send on .... kc/s (or.... m) and/or on waves of Type A1, A2, A3 or B?	I am going to send (or I will send) on....kc/s (or....m) and/or on waves of Type A1, A2, A3 or B.
QSX	Will you listen for .... (call sign) on .... kc/s (or .... m)?	I am listening for....(call sign) on....kc/s (or....m).
QSY	Shall I change to transmission on .... kc/s (or .... m) without changing the type of wave? or Shall I change to transmission on another wave?	Change to transmission on.... kc/s (or....m) without changing the type of wave or Change to transmission on another wave.
QTE	What is my true bearing in relation to you? or What is my true bearing in relation to....(call sign) or What is the true bearing of ....(call sign) in relation to ....(call sign)?	Your true bearing in relation to me is....degrees. or Your true bearing in relation to ....(call sign) is....degrees at....(time). or The true bearing of .... (call sign) in relation to....(call sign) is...degrees at...(time).
QTG	Will you send your call sign for fifty seconds followed by a dash of ten seconds on.... kc/s (or m) in order that I may take your bearing?	I will send my call sign for fifty seconds followed by a dash of ten seconds on....kc/s (or....m) in order that you may take my bearing.
QTO	Have you left dock (or port)?	I have just left dock (or port).
QTQ	Can you communicate with my station by means of the International Code of Signals?	I am going to communicate with your station by means of the International Code of Signals.
QTU	What are the hours during which your station is open?	My station is open from .... to....

The Centenary International DX Contest

By VK3ML, Contest Manager.

The following is a rehash of all the dope we printed in the March, April and May issues concerning VK's own International Contest. The staging time for our first and gigantic contest is just around the corner, one month to be exact. Think of it, lads—October—DX—Prizes, real live tubes and meters all made possible through the support we have received from Messrs. Philips Lamps Ltd., A.W.A. Ltd. and Siemens Bros. Ltd. You have not forgotten them by any chance? Well here they are again. Open event; First Prize, One R.C.A. 852, second, a Siemen's meter or set of meters to the value of £10, and third, one R.C.A. 800 tube. Handicap Event: Only one prize, TC05/25, QC05/15, TC03/5 and an E424. They sound as sumptuous as ever, don't they?

My—the ether just reeks of DX—take in a large breath and sample it! Taste those Gs (they go well for breakfast, as one author once said), those F's, W's, YI's, etc.? They are our "meat" for October, so go to it and polish up that gear and start working DX just to get the "atmosphere" prior to the big event, and make sure that every overseas ham that you work knows all about the contest. If he doesn't, then he can't read QST, Radio, T & R, Break-In or the Amateur Radio—therefore he is no ham at all. All the dope on our contest has been circularised throughout the world and the support that we are to receive is as much as anyone could wish for. Listen to this:—

To VK3ML,

Manager Centenary Contest Committee.

On behalf of the Oakland Radio Club, I would like to take this opportunity of expressing our sincere congratulations and best wishes for your October DX Contest stop We would like to go down on record in offering our complete co-operation in making your first contest of this nature most successful in every respect, and one long to be remembered in the hearts of loyal amateurs in all parts of the universe; to the best of our ability.

(Signed) Horace R. Greer. W6TI.

That's healthy enough, isn't it? Well, that is a sample of what our overseas fraternity think of our show. We expect hundreds of entries from VK, and thousands from overseas. Present indications are that the majority of VK hams will be entering for the handicap event owing to power permits, etc. However, some have worked out "infallible" systems for winning the test, but are keeping them well to themselves. Have you planned your method of attacking the contest?

To non and unfinancial members of the W.I.A. and A.R.A., we must point out blankly that this contest is only for those who support these bodies and the amateur movement in Australia. If you wish to enter for the test it will be necessary for a subscription to be paid to your Division's Secretary before October the 1st. It's worth it, sons—for your sake and for all the other 1200 or so hams in VK. Do it now!

At the request of the awards' donators, a special rule is to be added to the existing ones. That is, "That the contest committee shall be permitted to take part in the contest and compete for the awards on the condition that a representative of these three firms be appointed supervising adjudicators." The committee has agreed to this ruling and the names of the officially appointed judges will be announced next issue.

We have issued repeated warnings about the power input business being in accordance with the licence of the station entering, and this, after last month's editorial, will be our final advice on the matter. W.I.A. inspectors are being appointed in each Division with full power to check

any station during the period of the contest. We certainly do not hope to have to disgrace any entrant by proving a false statement—no ham would care to do that; but if the W.I.A. doesn't do it then we cannot be held responsible for any serious actions that the P.M.G. might take, as outlined in the August magazine.

Coming back to the happy side of the contest—we have arranged special articles this month on transmitters and antennae efficiency, and a treatise on October conditions generally. What more could one want? Co-operation, awards, hints on how to win, and when to hear the DX. It is all left to you lads yourselves now. Read the rules again in the March, April and May issues, and if you haven't got them send 6d. in stamps to the Editor for each copy required. Good luck to all.

(N.B.)—Logs and entries should be posted to the W.I.A. (Vic. Div.), Law Court Chambers, Queen Street, Melbourne, instead of Kelvin Hall, as given in the rules.

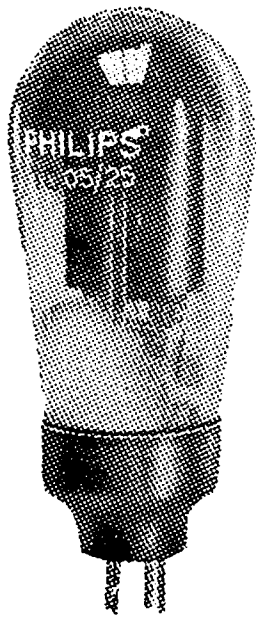
Centenary Contest Trophies

With the rapid approach of the Centenary International DX Contest, we wish to again bring before your notice the fact that all trophies have been generously donated by our advertisers. Our advertisers are doing their utmost to help us—are you all doing your share by supporting our advertisers?

Philips Trophy

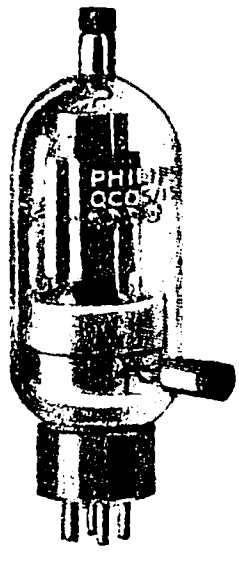
1st prize, handicap section.

MC1/50.

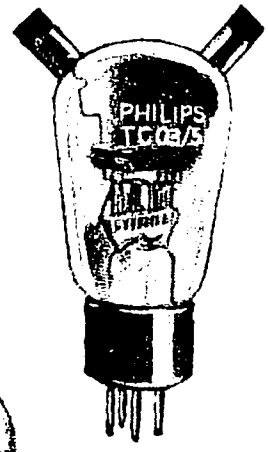


TC05/25.

E424N.



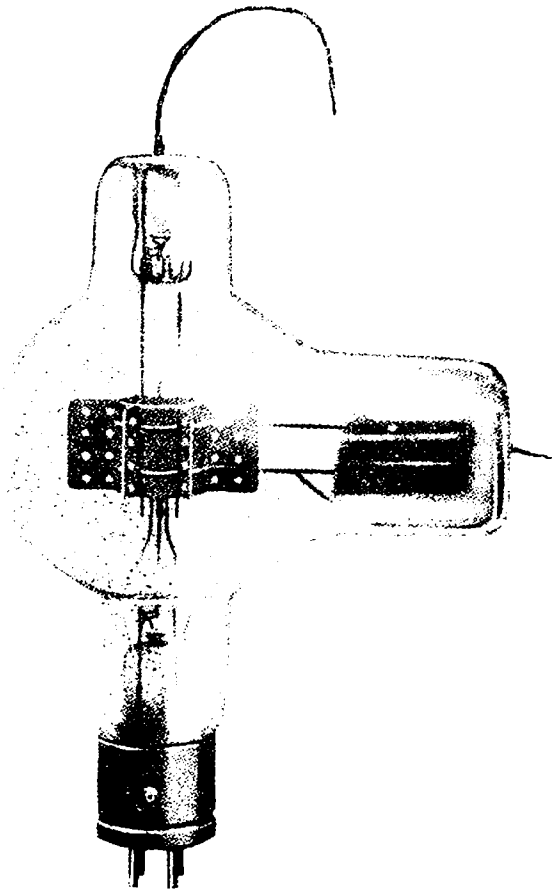
QC05/15.



TC03/5.

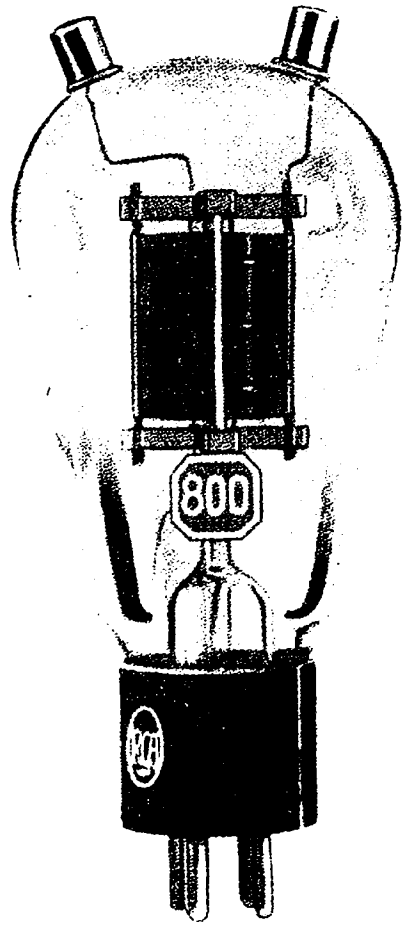
A. W. Valve Company Trophies

1st prize open section.



UX852

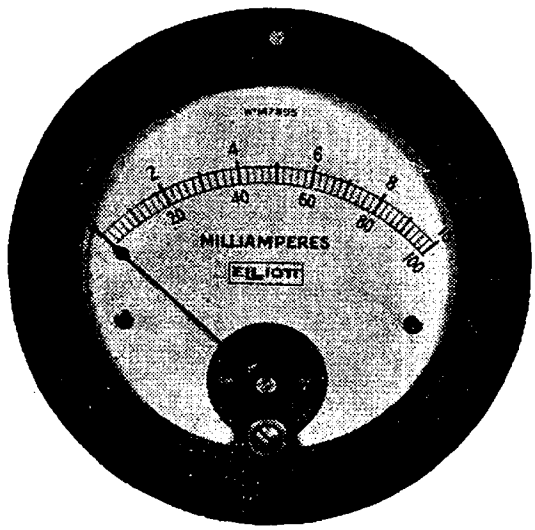
2nd prize open section.



RCA800

Siemens (Aust.) Pty. Limited

2nd prize open section.
Meters to the value of £10.



VK3 Section Notes

Key Section

ZO—VK3BJ.

The section's monthly meeting was held in the institute's f.b. new rooms in Law Court Chambers on August 7. The attendance was very good, and it is to be hoped will continue so. 3TY was welcomed as a new member. General business was dealt with, and, of course, QSL cards were distributed by 3RJ. All chaps interested are cordially invited to attend these meetings, which are held on the first Tuesday in each month. In the words of Mae West—"Come up and see us some time." Hi!

About 25 from the key, fone and short-wave sections spent a very interesting couple of hours on August 8, at the University's annual public demonstration inspecting the gadgets that were rigged up by the students. One exhibit, seen in the Biology School, which was the subject of many envious glances, would have been of great use to hams. This was a very cute little rock cutter and grinder, which would be ideal for accurately cutting and grinding quartz crystals with a minimum of effort, hi!

Conditions on the dx bands have been very poor lately, and not many VK3's are on the air. A few weak Yanks, Japs, etc., struggle through the QBM on 40 at night, and an occasional European is heard in the mornings. 20 meters is apparently dead again. However, things should brighten up by the Centenary tests, which are now only a few weeks off.

Most of the gang seem to be either YL hunting, rebuilding or, like myself, improving their rigs for the forthcoming tests.

3ZR qso'd F8CG on 7 mc with only 5 watts input f.b. om. Sounds like a fairy tale to me.

3FX has moved to VIS (now 2IM), and was heard from 2LZ recently.

5UK managed to visit a few of the local shacks when over here on holidays recently.

3XJ is making a good start. He is building a 3-stage xtal rig 2A5 c.o. 46 f.d. and 210 p.a. preparatory to coming on the air for the first time.

3YO is trying to satisfy B.C.L.'s who throw stones on his roof when he goes on the air. Your keying has certainly improved o.b. Congrats.

3PQ is rebuilding for the contest, also 200 meter fone.

3ZJ experimenting on 80 meters, with self-excited oscillators, and in between times manages to find time to work 3KT on duplex fone on 40 and 80.

3NM now has an 800 in his final, and finds it very f.b. So do I, o.m.

5DT (ex-3HT) is now stationed at The Granites, a dreary hole.

3KO rebuilding again for contest—59, 46, p.p. 46's, f.b., o.m., link coupling throughout.

3JT has the short-wave bug again, and will shortly be deserting 200 meters in favour of 20 and 40.

3LU doing a little experimenting on 75 centimeters. The only thing done so far is to euchre a tube.

3MR is rebuilding his rx, and also plans to rebuild his xmtr for the tests. The new rig will be 47 (40 meter c.o.), 47 f.d. (ent out for 40). QO 05/15 buffer and 852 p.a. Sure sounds f.b., boys. Hi! Competitors in the tests will have their work cut out trying to beat "Snow" I should think.

3VW, a new bam in Heidelberg, has been getting B9 reports from his M.O.P.A. 46 osc. and 46 p.a., with 8 watts input.

3XQ has not much time for radio, as he has to get up at 6 every morning.

3GP recently had a three-way QSO, with AC8MJ and PK4AI on 7 mc.; f.b., om.

3DP, the most consistent station heard here, recently worked two South Americans on 7 m.c., with his 30 watt M.O.P.A. He would now like to swap an HC card for a G one. Some guys do have all the luck, hi!

3FJ has now installed link coupling between his 46 doubler and 10 p.a. Finds it much more efficient than capacity coupling, and the output is certainly much greater.

3VU just rebuilt his rx., now sr. det. and pentode, also his monitor. Is using 1 watt input to self-excited at present preparatory to rebuilding in favour of crystal.—73.

VK3 Phone Notes

By J. R. KLING, VK3JB.

At the phone section meeting held on Tuesday, July 31, at the institute's new quarters, at 191 Queen street, there was a large attendance as usual.

Officers for 1934-35:—Chairman, Mr. G. Thompson, 3TH; secretary, Mr. J. R. Kling, 3JB; assistant secretary, Mr. W. Sievers, 3CB. The allocations committee were re-elected unopposed.

A vote of thanks was extended to the allocations committee by the section for the way in which they had carried out their duties last year, and Mr. Jim Kerley responded on their behalf.

During the evening an unexpected visitor, in the person of our new State president, Mr. H. Kinnear, arrived to give the section the once-over, and was given a cordial reception from the boys. He suitably responded with all good wishes.

Mr. George Thompson was elected to represent us on the Institute Council.

The allocations committee had a busy time deciding on the finalists in the phone transmitters competition, and their decision was 3BY, 3DH, 3PA, 3BW, 3AM, 3LU.

The finals were to be run in the order given below:—

Sunday, August 5.—3LU, 10.30 p.m. till 11.30 p.m.; 3AM, 11.30 p.m. till 12.30 a.m.

Sunday, August 12.—3BW, 10.30 p.m. till 11.30 p.m.; 3PA, 11.30 p.m. till 12.30 p.m.

Sunday, August 19—3DH, 10.30 p.m. till 11.30 p.m.; 3BY, 11.30 p.m. till 12.30 p.m.

The allocations for the next month were then read out by the chairman, and the crystals in the pool were then given out for the various positions on the "publicity band," as allocated to the applicants for frequencies.

Remarks were passed on the spacious rooms now occupied by the institute, and I believe it is everyone's opinion that we should make great strides from now on, and 3WI will soon be pumping out juice into the air from aerials erected on the roof of the new building.

VICTORIAN QSL BUREAU.

By R. E. Jones (VK3RJ).

Cards are on hand at the above bureau for the undermentioned stations:—3AY. BC, BP, BR, BX, BZ, CA, CM, CW, ER, ES, ET, EW, FC, FM, GA, GC, GE, GU, GW, GX, IT, JE, JG, JK, JL, JN, JR, JW, JY, KM, KO, LE, LP, LZ,

MM, NN, NR, NT, NW, OP, OX, OF, OY, OZ, PK, PN, PZ, QJ, QZ, RN, RS, RW, TM, WC, WD, WK, WN, WQ, WX, XK, XO, YF, YR, YL, ZK, ZO, ZX, ZY, Messrs. Dinan, Hecker, Garraway, Webb, Bennett, Mawman. The above cards will be forwarded to the owners on receipt of a stamped envelope. The address of the bureau is 23 Landale street, Box Hill, Victoria.

ZD2C, of Lagos, Nigeria, writing to a VK listener, mentions that he has never heard VK or ZL, and has had only one report from our part of the world.

Hunter, G2ZQ, writing to the VK3 qsl manager, complains bitterly of the response by VK's of all districts to G qsls. He also states that my par in a previous issue has had little effect, and that many G stations who worked VK during 1931 are still awaiting cards from VK to make their WBE and WAC. Cards owed by VK stations to G2ZQ are as follows (one asterik means that the card has been owing one year, two asteriks two years, etc.):—

VK2.—FQ*, HQ*, LX*, LZ*, PN, PT* XY*, YR*, ZW*.
VK3.—BX, GQ, HO, KA**, LN*, RW*, TM*, WX*, YP*, ZX*.
VK4.—JU.
VK5.—DX, JO.
VK6.—FO, GF*.
VK7.—JK**.

The first genuine VK3 call sign commencing with the letter I has recently been issued to A. Argoon, 3 Jervis street, Burwood, Victoria. No other I calls have been issued to date, so all others are pirates.

Writer was persuaded to break an oft-repeated statement "that never again would he waste his time or money on 28 mc." Consequent upon the enthusiasm (?) shown at the August KP meeting it was to be expected that there would be a good muster on 28 mc. on Sunday, August 12 and 19. However, a solid fortnight spent on that band adduced one qso, that with VK3BQ, and this by arrangement. Not another solitary signal has been heard. The VK2 gang are supposed to be on this freq. regularly, and, according to VK2YC, VK2BX. 2XY and 2YC are on this frequency every Sunday from 8 a.m. to 1 p.m. and from 5 p.m. to 7 p.m. Here's hoping.

Country Notes

NORTH-EASTERN VK3.

By VK3EG.

Condx here have sure gone funny on 40 mx. Locals rise to R max., and fade away just as they are qso. Yanx are the onli DX hr, and are strong enough, but ole man QRN has been having his say over there. In compensation 20 mx. has come to lite, and stayed put. Excellent DX can be had with the required patience, and condx on hand, and all sigs strong or weak seem to get them. At 3EG installed a half-wave vertical Zepp. with 15 ft. feeders. and first call landed W8CRA, who gave me R8, so looks like the vertical will stay put. The 20 mx rig hr at present is T.P.T.G., with 210. and seems to perk O.K.; but sounds like a power leak.

VK5KL is on the 14 m.c. with 15 watts on Hartley. Gets out well. R7 here, also 5HG. rattles the cans here. VK4EI has one of the nicest 20 mx T9 sigs. I've heard.

W5UB fone often hrd hr. R7/8 heavily modulated, and by the way he hollers at the mike he ought need no speech amp. Hi.

Ole John 2XQ paid a visit to Quirindi again, and was qso from 2HC. Had word with old Ray, too. 2HC put R7 fone into W3 and VE5 on 20 mx. F.B. oms.

2HV was in VIS, visited 2HZ. Bill has been in bed qrl with a QRO knee. 2YL has the xtal going agn. 2KN is rebuilding with 46's in the final. 2KR, they tell me, is on when B.C.L. 2MO is orf on 227 mx, hi. A YL from Young told me that 2LB called her up on her birthday. F.B. om ani skeds? Hi! I always thort there was more than records to this 200 mx stuff. Wassay gang?

2OJ is still rebuilding. Sa, om, you rival 2KN. But you ort to see the gear now; it's like a miniature W1XAF. 2XO has been on 40 mx now and then. Gess 80 mx must be crook now. 2VQ comes in hr wid a sig that must make QRZ gleeful. Glad you fade here sometimes, o.m. Hi. 2FY must YL a lot, as often hrd him after yanx from 1 a.m. on. 6OP is on 80, 40 and 20, and fone being good to copi.

20H landing a bit of DX, but still has the very slightest chirp in that xp dc.

3EG went to VIS some weeks back, gathered 20F and we went to see 2HB, 2ML and 2QJ. They use the ham gear at 2HB for gunnery practice from George's Heights, and 2ML and HB land soft jobs, as they're the only ones that can work the gear. Hi. 3EG, 4EL and W6GRL had f.b. 3-way QSO on 40 for coupla hours.

Regular skeds have been worked once and twice weekly here with Chas., of W6GRL, over the last three months, and an interesting study of condx, dental and radio has taken place. You should watch for Chas. for a good rag chew.

Sorry I can't report much on VK3, as hear very few VK3 sigs. here at all. 4JU, 4E1, 4EL, 4RM, all roll in consistently on 7 m.c. The rest of them are on 3.5 mc. Hi!

Had a lunch hour qso wid ole ex-VK3OT, now 4OT, on 20 mx wid a nice xpdc sig. He was getting me QSA2 R1 there. Hi! Glad to c.u. on agn, ole timer, tho, and gess the gang will be on your track agn soon.—73.

MALLEE AND NORTHERN DISTRICT.

By VK3WE.

3500 KC band has been the most popular one during the winter months. Conditions on the higher frequencies have been very erratic, but 80 metres has been fairly consistent, and all VK stations have made full use of it, as well as W's, K's and ZL's on fone. Observations over a period of several months lead one to the view that 20 and 80 metres far surpass 40 as fone bands, but I am not saying that all 40 metre fone is punk. Anyone who has heard 3ZX, complete with crystal mike, will agree that it is possible to put out very f.b. 40 metre fone. 3WE, 3LH and 5LR are also talking of crystal mikes. 3KR has departed on his trip to the Islands, having arranged skeds to QSO 3OR from various places en route. 3CH was on MOPA, using town DC for a few days. 3LH on QRP from town supply, but very QRL. Little heard of 3PY and 3CE lately, bnt understand the latter is now richer by a junior op. 3ZL heard occasionally; good quality fone. 3WN still pulling them in, and gone over to Heising modulation. 3OR still going strong. 3ZK has got the mitter at home, but sig not so good. 3CG and 3AN must be in the skip here. 3HG, 3KE, 3EG, 3JV, 3DW heard occasionally, while others to join the fone gang are 30X, 3LB, 3GU.

5LR, 5IV, 5MD, 5BR, 5WJ, 5PK still very consistent. 2RJ and 2RS are strongest VK2's on the band, closely followed by the Wagga gang —2UO, 2TH, 2YW and 2HU. Latter recently announced baptism of junior op. Others heard often were 2XZ, 2XO, 2KR, 2HZ. 2WH, 2DF, 2DR, 4UZ and 4KG. Conditions on the 200 metre fone band have not been very brilliant, QRN being bad during the first two weeks in August. The band is very active. VK2's, VK3's, VK4's.

VK5's can be heard here, and some lovely heterodynes occur when all get going on Sunday nights. By the way that some of the stations wobble, it is evident that the ruling that 200 metre stations must use C.C. is not being adhered to.

WESTERN DISTRICT.

By 3HG and 3OW.

The most popular band at present is 80 metres, as the higher frequency bands are very dead, DX being rather hard to raise, and is not worth the amount of calling necessary to raise it. 80 has been really excellent, despite a few days of bad QRN. Quite a number of Yanks are coming through; several K6's and one K7 have also been heard. 3GQ and 2BP have managed to contact W stations, the former getting an R4 report on his fone. 3JE, now of Coleraine, has been on the air with low power; but is waiting on his gear from Melbourne before doing much. 3LB has installed fone, and gets out very well, although his voice is much weaker than music, due to his usual microphone being on loan. 3HG also on fone and getting out fairly well, considering the 10 watt input, best report being R6 from ZL4CE. 3EK is still on 200 metre fone, but inactive on short waves. All the country boys are looking forward to the reserve week in VIM in October. It promises to be a bumper week this year. Please send along the dope on your doings each month.

News from Federal Headquarters

By G. B. Ragless, Federal P.O.

Queensland Wins Fisk Trophy.

The results of the 1934 QRP contest (the second leg of the Fisk trophy competition) are completed, and are presented here. It will be noticed that Queensland and Victoria had it all their own way, the other States not competing to any degree. The lack of entries was most surprising, and much regretted by the Federal executive, as considerable time and trouble had been taken. It was found that not a single State had a team of five as required by the rules for the averaging of the scores, but as the majority of the States had three entrants it was decided to use this figure. The winning State was thus decided by averaging the three highest scores of each State. The four best scores—who all have "K" as a part of their calls—are:—VK4GK, 44,170; VK3KO, 31,110; VK4UK, 28,540; VK3YK, 22,641.

A number of stations favoured the 3.5 mc. band, where a large number of ZL stations were worked, but some of the leading stations used 7 and 14 mx, depending on the power used.

Of the Victorians Mr. K. Wellington, VK3KO, had 29 contacts with ZL on 3.5 mc., and Mr. G. Douglas, VK3YK, made 28. Mr. Norm. Cameron, VK3PG, worked U.S.A. four times on 14 mc., and used 3.5 mc. for a large number of ZL contacts.

The Full Scores.

	Total Miles.	Power.	Contacts.	Score Points.
VK4GK	207,600	4.7	30	44,170
VK4UK	46,235	1.62	30	28,540
VK4EI	77,040	10	30	7,704
Average for three leading stations, 26,805 (5 points to aggregate).				
VK3KO	44,150	1.95	30	31,110
VK3YK	44,800	1.44	30	22,641
VK3PG	71,560	3.96	30	18,070
VK3RJ	55,650	5	21	11,130
Average for three leading stations, 23,940 (4 points to aggregate).				
VK5KL	22,950	5	24	4,590
VK5XU	32,138	9.5	19	3,382
VK5LD	5,650	1.73	5	3,260
Average for three leading stations, 3,744 (3 points to aggregate).				
VK2KJ	6,300	2.5	6	2,520
Average, 840 (2 points to aggregate).				

Adding the points to those secured in the first contest the aggregates are:—Victoria 9, Queensland 6, South Australia 6, New South Wales 6, Tasmania 2, Western Australia 0.

COMMERCIAL QRM.

It has come under our notice that an Australian commercial station has been causing bad QRM on the 7 mc. band, and a complaint has been lodged with the P.M.G.'s Department. As it is contrary to the international regulations for a commercial to operate in the amateur bands this station has probably drifted in accidentally, due to lack of frequency control. If any member receives QRM from any commercial operating unlawfully in an amateur band Federal executive would be pleased to receive full particulars.

W.A.C. CERTIFICATES.

At the last meeting the Federal executive examined QSL cards from the following stations, which were found in order, VK2BA and VK3JJ. Congratulations are extended, and they will receive their certificates from IARU headquarters in due course.

The Association of Radio Amateurs N.S.W.

It is indeed gratifying to the VK2 hams to find that whereas "Amateur Radio" when first published was considered merely a "family" magazine, with its circulation limited principally to hams, an ever-increasing demand for the paper is becoming apparent from "outsiders." As radio enthusiasts, therefore, they should link up with one of our radio clubs or the A.R.A. (N.S.W.).

A quite mistaken impression appears to prevail amongst the ranks of these "quasi" amateurs, that membership to radio clubs is limited to those holding the A.O.P.C., and just with the object of clarifying the position somewhat, we would like to state emphatically that the A.R.A. (N.S.W.), or any of its affiliated radio clubs, welcomes to their ranks any person at all who may be interested in short-wave radio. We have amongst us, in this State as in all others, an ever-growing number of comparatively recent "converts" to short-wave radio, and it is to these recent worshippers of short waves that this appeal to join up with the ham movement is directed. The secretary of the A.R.A. (N.S.W.) (Mr. Robert H. W. Power, of Wembley House, 841 George street, Sydney) will be only too pleased to furnish to any inquirer the fullest possible information regarding location, fees and particulars of any radio club.

In addition, at the risk of being charged with taking valuable space in which to reiterate the "remark superfluous," we want to increase the N.S.W. circulation of this journal. All N.S.W. supplies are handled by the A.R.A.. and any subscription forwarded to the Secretary (as above) will ensure prompt and regular delivery by post each month. Subscriptions are 6d. per copy or 6/- per annum, post free.

F. M. GOYEN, Pres. A.R.A., N.S.W.
R. H. W. POWER, Sec. A.R.A., N.S.W.

NOTES FROM HEADQUARTERS.

The usual monthly meeting of the A.R.A. was held at the rooms of the Radio Telegraphist Association. There were about 40 members present.

it was decided to co-operate with the organisers of the Gentlemen's Hobbies Exhibition in aid of the Industrial Blind Institute. The exhibition is to be held in the Trust Buildings from September 12 to the September 22. The idea is to house a complete ham station. The final arrangements were left in the hands of a committee, consisting of 2UX, 2FQ and 2HZ. A cash prize was also donated by the A.R.A. for the best piece of apparatus.

Rex Cawtbron (2VO) was elected as vice-president in place of V. Stanley, 2VS, who was forced to resign owing to pressure of business. Complaints were recorded regarding the operating of Townsville Radio VIT in the middle of the 40 metre band, using an input in the vicinity of 1 kilowatt.

Owing to extremely bad weather the field day to be held on July 29 was postponed, but is to be held on August 26.

A suggestion was mooted that the Federal executive be asked to consider a five-point relay contest as the contest for the next Fisk trophy, as it is of more general appeal to the majority of hams.

The meeting wound up with a debate between a team from Zero Beat Radio Club and an A.R.A. team. Gordon Kempton, 2UL and 2HZ being the Z.B.R.C. team, while 2BJ. 2ZR and 2WD represented the A.R.A. The subject—Electron Coupled Oscillators versus Crystal Control. Many interesting and novel points were brought forward, and the result was recorded by the adjudicator, 2UX, in favour of the crystal team.

WESTERN SUBURBS WHISPERINGS.
VK2MY.

QRM? Now, who got loose on the evening of Wednesday, 25/7/34, about 2145 SMT? Was sitting in the shack talking to a local ham, and sandwiching a thriller from 2GB in between mg chews, when a R9 Blooper proceeded to churn its way gaily up and down 2GB's freq. wheeow whoo whoop . v . v . v . Test . Va . Several nights later at 9 p.m. the offender came to light again, and proceeded to burble forth the information that gunnery practice and torpedo practice would take place, etc. As these sigs were R9 in BCL sets at Lakemba some miles away it seems pretty obvious that once again the poor ham will have to shoulder the blame of irate BCL's, while the commercials and the navy play about to their hearts' contest.

2PH, whose sigs are generally R5 in the west suburbs, has suddenly jumped to R9.

2RY is still very QRL building superhets. You should have seen Ivan pounce on that error of VK3LH's in A R of June.

2ZH has strayed from the fold. At present he is on the staff of B class 2MO, at Gunnedah. Believe that 2XJ is now the possessor of that famous Sniggle Snooper.

2FD.—Congratulations, Frank, on having acquired a second op., but be sure and bring him up on CW first OB. I have heard an unkind rumour that his voice doesn't respond too good to the high freqs. on the new condenser mike?

2FO swears that there is a close season on DX out our way. Sez he can hear DX of all sorts, but unable to raise anything worth wile, altho he appears to get more than his fair share of PK's.

2NP reports that his DX has increased 200 per cent, since putting a few feet on the far end of his antenna. Believe 2NJ also had the same experience, and yet 2ZH, our local DX king, says he has to have his antenna almost parallel to the ground to work DX. How come?

2QR is apparently still convalescing in VK4. Hope that yon are fast recovering your old punch, Bob, and will be ready for the Centen. test.

Notice in the last isue of "A.R." that some VK5's are not getting all their Qsl cards from their VK6 contacts. I must be lucky; I've got two out of 17.

2OM.—Congrats. on getting your first-class commercial, Jack. With all that knowledge we probably will not know your phone next time. Getting notes of the doings of the gang over here is like getting pearls out of oysters. Would like some of the Ryde gang to give me some notes from around there. What about it, 2YZ?

2MY is fast going grey trying to make 2QA's version of a PP linear amplifier work. I actually got 60 M/a in the grid the other night, but when the PA was switched on it vanished back into the buffer.

2PG sez he has by far the best power trannie in VK2. After running for 5 mins. it will act as a radiator, and also fry the family sausages.

2MQ is very QRL with too much work. Hopes to complete his single sig super in time for the Centenary test. However. Mac. will probably use a couple of T250 in the PA, so he should land his fair share of DX.

ZONE 2.
ZO—VK2HV.

VK2RV (Ron Huband) is a new-comer to Zone 2, and receives f.b. reports on his QRP rig. Ron is contemplating QRO, and how. 200V on 245.

Ray, of 2HC-2BE, is QRL with B.E.R.U. correspondence, so not much dope, however, still plenty of Yanks worked on 20 metres fone, with the old 4-stage crystal. The boys sure hope you are O.K. again, Ray. 2XQ, the old John, is QRL shearing in Quirindi at present; but not too QRL to punch brass, I'll bet. 2JF has been QRT for some time now, and looks like he is as far away from activity as ever. 2KN should be on again by now.

The old Clem, of 2UR, after three years QRT, will soon be back on QRP xtal. 2WT has just a few alterations to make ere tuning up on 7 m.c. with modulated R.F. Jack and Toddy, of 2CR, should be down on 40 soon to dodge QRN for the summer. Can't anything keep Cecil, of 2KR, off the air? He sure wins the belt for the most consistent ham in zone 2 this winter. Any AC in Gunny yet, Cee., OM? Has anyone heard Ivan, of 3EG. Say, Ivan, when is the Back to Quirindi week coming off?

2ZP is going full blast again. CQ has taken the place of YL. The only thing wrong with 2ZP is his telephony? 2HV QRP with S.E. rig again. Teddy 2nd, of 2HV, hopes to be on soon, and would like to meet the 7 mc. fone gang per 2HV. We've still got hopes of hearing 2NA ere 1934 passes. Pretty feeble ones now, though, Andy, OM.

Say, chaps, could you please get the notes to 2HV by the 10th of each month. It's a hard job to get five months' dope from one letter.

ZONE 3.
ZO—VK2XO.

The Garden of Eden is still on the map. Most of the gang are active. the most consistent being 2SL, 2WS, 2CB, 2ZM, 2KR, 2XO, 2YK. 2SL has one of the best phone rigs on the air, using 59 Tritet and a box full of 46's, using xtal mike. 2YK, the 230 QRP merchant, is busy on sked with R.A.A.F.R., and holding his own with his QRO brothers. Roy has been on the air now for many years on CW only, and at last has decided to put in QRP phone. 2XO has been putting on slow Morse practice every Sunday night at 7.45 p.m. till 8 p.m. for a number of interested B.C.L.'s on the North Coast, and if all goes well there will be quite a number in the Garden of Eden sitting for the next A.O.P.C. 2XO is using a loud speaker for a mike, and reports are better than any other types of mikes tried. It is a D.C. job, with a 6V field, and has more gain than a P.M.G. mike.

Conditions on the 80 metre band have not been of the best on account of bad skip at night, but during the day time conditions are wonderful. The Sydney and Melbourne stations come in well at mid-day, and 2NO and 2XO have been QSA 4 on phone in ZL at 12 noon. Can the 40 metre gang beat that? 2OV has been QRT on 80 for the last three months, also 2ZM, 2GI, 2NY, for what reason? 2XO and his second op. have started cutting xtal blanks out of a quartz the size of a kerosene box. 2WS, the Garden's QRO station, has been QRT on account of BCL QRM, and is changing his QRA, and will not be heard on phone for some time. 2CB, Bangalow, on QRP fone, and good to copy. 2ZM, Grafton, skites about the Clarence River every time he is on the air, about our bridge, our avenue, our river, our fish, etc. 2KR is still on QRP phone, and with Strawberry, his second op., is getting plenty QSO's. The Gunnedah gang, have been doing a lot of building and testing out in anticipation of the change-over of the power supply of the town from D.C. to A.C. 2XQ is now at 2HC, and will be 1st op. at 2HC for a few months. John will try out Ray's rig after the DX. It is pleasing to hear that Ray's health is well on the way, and Ray himself has had a few QSO's. 2FE has been experimenting with receivers, and has spent pounds trying out different circuits. The best so far is a two-valver, described by George Grammer QST, June, 1934. There is not the slightest sign of background noise, and one does not know it Is in osc. till you twist the dial, then mind your car.

ZONE 4 (NEWCASTLE).

ZO—VK2OG.

On a recent Saturday afternoon the Newcastle Radio Club turned up in full force to inspect the local steelworks, and had a very fh. time. The boys were particularly interested in QRO meters in the power house, in many cases reading up to 2000 amps. and 7000 volts, but decided it would be too much trouble shunting them for use in their rigs.

After detailed explanations in last month's notes of 2KB's QRO rig, which is in the process of being built, we have to report that in all probability Allan will shortly QSY to Sydney. All kinds of luck in your new QRA, OM.

Jim's 2ZC, poor ole 45's, are still holding their own in the endurance test with a wopping big input, and they run stone cold, too. The rig now boasts a pair of GU1's as rectifiers. 2MT is now experimenting with QRP A415 in Hartley. Charlie was QRO mad not so very long ago, but was recently married. Nuff sed. 2OF not very active these days. Mainly skeds on 80 mx. The 3-stage xtal rig still hangs together much to the surprise of the boys. 2FN is now active again from his new QRA. Fb to hear you, Geoff, OM. 'Tis rumoured that 2FN and 2RG have come to an agreement on respective times for ether busting, and have signed the Magna Charta. Their aerials are almost touching. 2UF divides his time between 20 mx and 40 mx, while 2SO uses Mopa on 80 mx.

Lionel, 2CS, rebuilding QRO this time. Stan, 2ZW, doing his best to rejuvenate a pair of very tired 211E's 14 volts in their filaments does the trick. Nothing like being optimistic, Stan, OM.

ZONE 5.

ZO—Eric VK2?

The usual changeable conditions for this time of the year are very much in evidence in this locality. Early in July 20 metre QSO's, with the W's, were easier to raise than VK's, but after the second week in July conditions gradually became worse until at present it is practically impossible to raise anything, though a number of countries can still be heard. Looking at 40 mx, conditions here have been consistently bad, and one is struck by the absence of some of the well-known R9 sigs from over the Pacific. Even W6AM and W6CUH are only about R5/6. 80 metres show plenty of signs of activity, but even here one wonders at the volume of QRN for this time of the year. One wonders what it will be like next summer. Zone 5 may have its fourth ham in the ranks shortly in the shape of Allan Doolan, of Leura. We hope you were successful in the A.O.P.C., Allan, OM. 2RJ still finds time of a Sunday to let us hear some of his real fb fone, while Trev., at 2NS, still seems to be too QRL or QYL to put that excellent T9 sig on the ether. Perhaps Trevor is conserving his energy for the big contest in October, and we already know his ability to win them. Plenty of luck, OM. Two OT's in 2ZW and 2PN both heard on the one night warming up on 80 mx, but the effort too great for them, and they are again conspicuous by their absence. Jack, up among the 2QA gold mines, has something up his sleeve in the way of a class "B" linear R.F. amp. for the QRP fone merchant. Jack will spill the beans soon. 2BP still grinds away, and growls about punk conditions, though he gets his share of QSO's.

Eric has been carrying out a couple of interesting tests with ZLICD, W7BKC and W7CMQ on the 80 mx. band. A shiny new rx has taken the place of the old 5-tube T.R.F. set at 2BP. The new rx. uses 58-58-56-56 tubes, and is fb. for break in.

ZONE 6.

ZO—VK2QA.

Owing to heavy rains and consequent QRM all over the State conditions on 80 have been a bit off colour. 2RJ, the old man at Mandurama, is back bigger and better than ever. The old genny rewound, and reports the national FBXA performing very well. Hopes to have the A.C. connected shortly. 2WH still working remote control, mostly on with 2LM, who is using sup pressor grid modulation, and obtaining wonderful reports. Gets out better with 15 watts than he used to with 150 modulated telefunken system, is also using a small electron coupled receiver. Nothing heard of 2NM; guess he must be rebuilding "again"? 2QA burnt out his genny again, and is at present trying to construct a rotary converter. Hopes to be on fone again shortly with a fair percentage of hum. The ew. rig at present in use is a 3-stage cc. job, using a pair of 45's P.P. in the P.A., with 50 volts on the plate.

Zone 7.—By VK2FI.

Most of the zone 7 gang have been heard working on 80 mx during the past month, where conditions have been patchy. 2TM, a comparatively new ham, located at Monteagle, near Young, puts out a nice signal from a QRP xtal job, using a 33 C.O. and 33 PA, working from "B" batts. His fone, using telefunken modulation, gets out quite well.

2GY, of Mount Stromlo, Canberra, is heard on RAAFWR skeds, and puts out a hefty signal.

The Wagga gang have been heard occasionally, 2UO predominating.

Rumour has it that Jack, of 2WA, is suffering from acute YL-itis, and radio taking a back seat. He was heard on 80 mx. fone recently, however, inquiring about s.s. supers. Allan, of 2TA, has been holidaying at Kosi, but since his return we believe he has been very ill. It is to be hoped you are on the mend by now, Allan.

Old 2RS, of Balmnald, puts in an appearance every Sunday evening to join in the multi way international fone QSO presided over by 2RJ.

2RJ's fone is the loudest signal on the band here, the quality being excellent.

What's become of 2PN, 2GT, 2JQ, etc., these days? 2XF was heard using a portable rig.

Well, here's wishing you all the best of luck in the Centenary contest.

ZONE 8.

ZO—VK2QJ.

2YI spent a couple of weeks in VIM, and was able to be present at a WIA meeting. He also inspected a good many shacks, and had an fb. time. His call sign evidently was not idle during his absence, as one VK3 told Harry that he only QSO'd him the previous day, but YI had been in VIM almost a week. Says there is only one thing wrong with VIM—their 800's are too expensive. 46's are cheap, tho, OM.

2QD and 2YI exchanged xmitters, and QD has been on 40 mx, occasionally with Tritet osc. and YI has Mopa. 3EG's trouble with BCL's was cured by getting further away. He is now in fb. location. Shack is a round concerte tank (water proof), and appears to act as an effective shield to BCL's. Sky wire is full wave 40 mx Zepp, with 92 ft. feeders.

2VF heard calling CQ on 40 mx few weeks back. R3 here, Reg. Called you several times, but ND.

Sorry to hear of your trouble, Bill (2HZ), and the Albury gang wish you a speedy recovery.

VK4 (Queensland)

By VK4RY.

The monthly meeting of the Wireless Institute (Queensland Division) was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, August 3, before a good attendance of transmitting and student members.

After the general business a very interesting lecture on television was delivered by Mr. P. Kelly, and was enjoyed by all present.

The student classes are now in full swing, and any person desiring to join up should get in touch with the secretary, Box 1524V, G.P.O., Brisbane.

Conditions on the various bands have been poor in VIB for some time now, and the boys are anxiously awaiting the time for the return of dx signals.

4HL is at present using a TNT with an input of 25 watts to a 245; is also building a new three-tube AC receiver. Says it will be the berries when completed.

4WB is now on the air with a Hartley, and seems to be getting out fairly well, with an input of 15 watts to a 245.

4E1, of Townsville, intends rebuilding his rig. shortly; must be getting ready for the Centenary dx contest.

4OB has been up on 80 mx, and been landing plenty of fone Qso's with ZL.

4RM is putting out a very hefty signal, and at times fairly rocks in VIB.

4RC has just completed his new three stage mopa, but has been striking a lot of trouble in getting a decent QRI, using 47, 46, 46.

4UK, of Toowoomba, recently paid a visit to VIB, and bought a lot of gear. Intends rebuilding xmitter and receiver. Vic. is looking forward to the big dx contest.

4WT, having just returned from holidays, has made himself a new bug, and he delights in throwing out stray dots. However, Bill states everything will be o.k., after a bit of practice and adjustments; we all hope so.

4NG is operating portable gear, and certainly does some fine work on 80 mx., where he can be heard working ZL in grand style.

4US and 4WD are putting in good work as Morse instructors at the W.I.A. rooms, where they can be seen teaching code to student members.

4JB will be off the air for some weeks, as he will be leaving in a few days for the West. However, he is taking a receiver with him, and no doubt will have lots to tell us on his return.

4GU is building a new shack. Says the old one is too small. Dick landed two new countries recently—F8 and SU. How you do it, o.m.?

4JM not heard here lately. Believe the old 45's have gone sick. Understand Jim will be on xtal shortly.

4FK will be leaving us shortly, having been transferred to VIM. The boys wish you all the best, Vern., o.m., and will he looking forward to hearing your sigs from your new QRA.

4RV, of Cunnamulla, and 4NJ, of Tallebudgera, have been visiting VIB for the show festivities, and made calls on several local boys. Some good yarns were exchanged, and also some good advice was handed out by these old-timers.—73.

VK5 (South Australia)

By Eric Halliday.

Things in VK5 up to 20/8/34 have been very quiet. Many of the rigs have not been switched on for weeks, because of the absence of DX.

Nearly all the active hams have become 200 meter conscious. Each Sunday sees more and more new stations working on this band. At the present time nearly 30 stations have been granted permission to operate on this band. This is equal to about 25 per cent. total number of amateurs licensed in VK5, and the interference problem is becoming more and more acute, as at present xtal control is not essential on the band.

5RP, 5BY, 5WS, 5MD, 5DR and 5KH are still putting out f.b. transmissions on 200 metres. 5SU recently made his debut, and others who expect to be on in a few weeks are 5MU, 5NR, 5JO and 5QR.

The August general meeting took the form of a picture show by Mr. J. Ferry. Nearly 70 members attended. Interesting views of Sydney, La Perouse receiving station, and Pennant Hills were shown.

The TDS continues to be the most active division of the Institute. An instrument has recently been constructed for checking the frequency of xtals.

80 m. fone. still continues to interest 5FM. 5WP has been thinking about going over to xtal, and will be a starter in the Centenary contest. 5RX has been heard on with a tritet crystal rig. Hopes to excite a couple of high power tubes in p.p. with this oscillator.

5EM is a new call in VK5 belonging to Jack Mann, of Newman street, Semaphore. Jack's sister is second op., and the rig is a Hartley, using a 45, with 8 watts input on 40 m. 5RT has been beard on, with some good 40 m. fone. 5GA has been QRL building a new crystal rig. 5GW has been raking in plenty of DX on 20m. George recently built the 3-tube receiver described in "Amateur Radio." Says it is the goods for DX, the W's, etc., coming in like locals.

5HW has just started another series of elementary lectures for the Institute, and there are nearly 30 students attending them. The code class conducted each week by 5WP also has an attendance of 15 members. 5FQ, of Balaklava, has been getting out fairly well, recently working J, PK, KA and W. 5KQ and 5MZ have been again interested in 56 m.c. fone. 5RF hopes to build a new rig. It will be a rack and panel job, with probably 210's in p.p. in the last stage. 5XK has been heard on the air again.

(Continued on page 28.)

R.A.A.F. Wireless Reserve Notes

Notes and Activities.

Federal Notes by the C/O.

With the training of members advancing so rapidly in the past few months it has been found necessary to further the standard of procedure in all districts. Thus, in a short space of time there will be issued part 2 of the Signal Training Manual. This volume is really very much advanced, and will take some time to thoroughly master. However, arrangements will be made with the district commanders to exercise the members very frequently in the new procedure. The standard of this new part will take us to as high as we could wish to go in our capacity as a reserve. When it has been thoroughly absorbed attention can be devoted to other interesting branches of training, and a move is being made to have the co-operation of the squadrons in practical training. News has been received that there is to be created shortly a squadron in West Australia, and we have hopes of better training conditions and more interest in that district.

A suggestion has been made that later on in the year the reserve should stage a gigantic field day for all members, the idea being that every member takes some portable gear, operated from batteries, out into the country, at least 10 miles from his permanent address, and works the whole week-end. Groups of stations could be organised, and we could undergo some real field or service training, which would be of valuable experience. However, this has just been thought of, and nothing further has been done to date, owing to various amateur engagements within the next few months. The next thing you will hear is that a request will come from your D/C for movement on a certain date together with full instructions regarding operating schedules, etc. There is no time like the present to forward suggestions and ideas that would help to make such a scheme a happy and enjoyable one for everyone.

Now that applications for membership will only be received every two months, starting from January, a major alteration has to be made in the training of recruits. Approval is being awaited for the examination of members in procedure for the appointment of official instructor in training. The idea is that as D/C's have so much to do at present, it is hard to expect them to devote so much time to training newcomers as well as run the district. Therefore, all qualified members should be capable instructors, and those that pass this simple written exam. will be given charge of a section of recruits for two months, and will be responsible for their education. If these recruits pass out satisfactorily in their examination after this period they will be transferred to a section proper, and the instructor will go back to his. It should be the aim of every reservist to show how much he has learned since joining by obtaining a pass in the test. In future no person can hold the appointment of section leader without being a qualified instructor. This is only fair and reasonable, because the S/L is there to train those in his section, and it is to nobody's benefit to be led by a poor operator. Full details of this proposal will be circularised to all members shortly, and the examination particulars enclosed. So, go to it, and fully master part 1 of the Signal Manual in order to be ready for the next volume. Part 2 will, of course, not be used in the above scheme for instructors' tests.

It is hoped that training flights will be conducted from Richmond and Laverton in September. Watch for details in the broadcasts.

SECOND DISTRICT NOTES.

By 2Z1.

During the past few weeks VMB has undergone a complete reorganisation. Previously four sections were in operation, with perhaps two or three active members in each. These active men have been banded together into two complete sections, and at present constitute the only active sections in this district.

Some members have notified their temporary indisposition, and have been given a period of two months in which to arrange some means whereby they may commence training.

The decided increase of traffic totals for this period proves the right step has been taken in the reorganisation, though it is noticed that some members who were counted on to "do their bit" have not yet seriously settled down to the work in hand.

On 5/8/34 a "test" broadcast was transmitted in the form of two messages addressed to VMB. These messages contained in all fourteen errors in both procedure and spelling. All members were to have copied this, and submitted a statement pointing out the various errors. Owing to the sudden indisposition of the S/L for VMB1, the returns for that section have not yet been received, but will be published next month.

The returns from VMB2 were as follows:—

2B2 detected 12 errors.
2B3 detected 13 errors.
2B4 detected 6 errors.
2B5 detected 11 errors.
2B1 did not submit a report.
2B4 reported local interference which marred reception.
2B6 was absent on business.

Another of these tests will be conducted shortly.

Arrangements are well in hand whereby VMB will combine with VMD in a relay test. It has been proposed to conduct this contest during the last week of September. Only certain members in VMB will be eligible for competition, and they are the ones constituting sections VMB1 and VMB2. In all, it is hoped to have at least 20 entrants.

At present the D/C's for VMB and VMD are compiling the rules for the contest, and these will be completed before this appears in print. Each member will be supplied with a copy.

Great credit is due to the S/L's, and members for their fine traffic handling this month, especially 2A1, who carried on though not in good health, and it is with regret that I have to announce that this fine chap has at last had to discontinue activity.

The new S/L's for VMB are now 2A2 and 2B5, and if they follow in the footsteps of the retiring S/L's 2A1 and 2B2 I am sure the high standard of these sections will be retained.

Traffic.

VMB, total 1028, average 114-22.
VMB1, total 415, average 103-75.
VMB2, total 613, average 122-6.
Highest score—2B5, with 279.

THIRD DISTRICT NOTES.

By 3Z2.

In the absence of 3Z1 I am writing these notes in the hopes that they will pass muster. Our inimitable D/C has left hurriedly on a short trip in hopes of recuperating after his short but severe illness, and we hope that long be-

fore next issue he will be back with us again. 3C2 sailed recently for Fiji on the Strathnaver, and was wished bon voyage in person by 3D4, 3Z2 and quite a group of friends. He hopes to visit a good many stations in Sydney and Brisbane as he passes through, both going and coming. The only schedules he has made are to work with 3D4 from VK2HU.

The country members are very pleased with the idea of the proposed section flights every month, but as they have been so often disappointed in the past they will believe them when they see them. They are all keen on the camp at Point Cook, but in many cases report that it will be impossible for them to spare the time unless it could be made to coincide with the convention.

The Sunday morning schedules have been well attended in most cases, but one cannot help noticing the difference on the days following Test matches. On those occasions there are fewer stations active, and the ones that are on duty lack some of their usual sparkle.

The traffic totals are not as yet all to hand, but the few that are in are given below:—3B3 23, 3B2 6, 3D6 50. This latter total would have been much higher had it not been for the trouble that is being caused to a prehistoric B.C.L. set a few doors away.

(Continued from page 26.)

VK6 (West Australia)

By VK6CP.

In August magazine the office-bearers were inadvertently wrongly reported, and the correction is as under:—Hon. president. Dr. Nimmo; president, A. E. Stevens (6BN); vice-presidents, P. Kiernick (6PK) and W. Coxon (6AG); secretary, C. Quinn (6CX); assistant secretary, V. Bell (6KR); treasurer, J. Parks (6BB); publicity officer and QSL, J. Mead (6LJ); journal editor, C. Cooke (6CP).

The council have met and discussed various plans for the future, chief of which being the rejuvenating of 6WI station and 10 mx. and 5mx. work.

Relating to the exploitation of 10 and 5 mx bands, all members are requested to attend the general and shack meetings to put this matter on a solid basis.

The A.O.P.O. classes are in full swing, with 6CP assisting by slow Morse on Wednesday nights from his station on 80 mx.

Quite a few of the gang have been on the sick list, but should all now be O.K. for big things.

Looking at "Amateur Radio" doings during the past two years it is noticeable that there has been no outstanding development. Certainly hams have found out how to use the new type of tubes to the best advantage, but this has all been done on the old style, which most of us knew years ago.

Getting fone out on 80 and 40 mx has whiskers on it, and it is up to us as a body of hams to exploit the possibilities of our higher frequencies, to try and devise new and original hook-ups, etc. With these ideas in view, boys, let us show the world that ham radio lives and VK6 leads.

Most VK6 local work is being done on 80 mx on fone, and those responsible are 6RA, KO, KB, HD, MN, CP; CW stations are 6CY, FH, KZ.

6RA has now f.b. fone, with a good sharp carrier that makes it a bit difficult for anything but a good RX to hold. He also has a top-notch electron couple RX.

6KO fone very weak and patchy.

6KB has never reached standard in his new QRA.

6HD came up quite decent recently, although still using Heising on push-pull oscillator.

6MN quite decent.

6CP the same old thing, just plain fone.

All the above can be heard on Sunday evening in a circular QSO.

6FH, an old ham with a new beginning, is pounding out good CW, and 6FM can sometimes be heard on 40 mx.

6CX, HW, CY, KZ all doing a bit on the key.

6FL is very ill, and we all wish him a speedy recovery.

Country hams are very inactive just now, while nearer home the news comes as a bombshell that 6KR is selling all his gear, and going into recess indefinitely. Vic. was a real live wire on the air, and, together with CX, has just gained his limited broadcast. Congrats!

Well, cheerio, boys, and when are you going to give me those technical articles and station dope.

Please note.—The address of our secretary is 162 Subiaco road, Subiaco, W.A.

VK7 (Tasmania)

By VK7PA.

The monthly meeting of this division went off quietly on Tuesday night, August 7, with only a fair attendance. The membership list benefited again this month, and the 200 meter gang continue their call for members; the steady increase of late has been due mainly to these announcements.

Since last month, I might mention, ham membership is now 100 per cent., the only previous non-member having joined up.

The meeting decided that a small token, suitably inscribed, be forwarded to our old associate ex-VK7GE.

Another point of interest was the decision to open the club rooms every Tuesday night to encourage members together, and it is hoped that advantage will be taken of this move, and make the effort worth while, so roll up, lads, and discuss your problems together on Tuesday nights at the rooms. A short talk or two will be arranged if sufficient interest is shown, and there is always a good yarn or two to be told, hi! The meeting concluded with a talk on the S.W. superhet receiver, conducted by 7RB, which was much appreciated by all.

Activities, at the moment, seem to be centring around the Centenary contest, and the preparation for this is foremost in the minds of all active hams here.

VK7 is to have two trophies for this contest—one for the receiving class—non hams, and one for the ham who secures most points during the contest.

7JB is preparing for a vertical antenna, to which end he is installing a 90 ft. stick.

7RB is to act in the capacity of official op. for 7WI during the contest, provided a suitable xmtr. can be constructed and ready in time.

7LJ has been improving his skywire; has a half-wave 80-meter doublet up now.

7CW has been using a crystal mike of late, I don't know whether that will account for the studio noise you hear from there—the clock with a wheeze and the anvil effects when turning records. Keep your switch up, Crosby.—73.

SOLVING YOUR INSTRUMENT PROBLEMS

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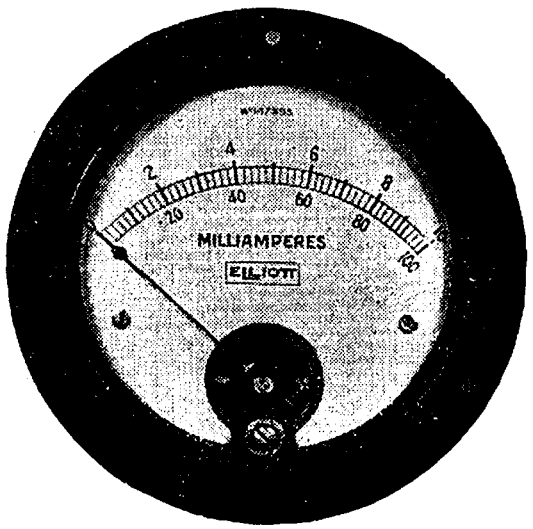

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AMATEUR RADIO

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INDEX

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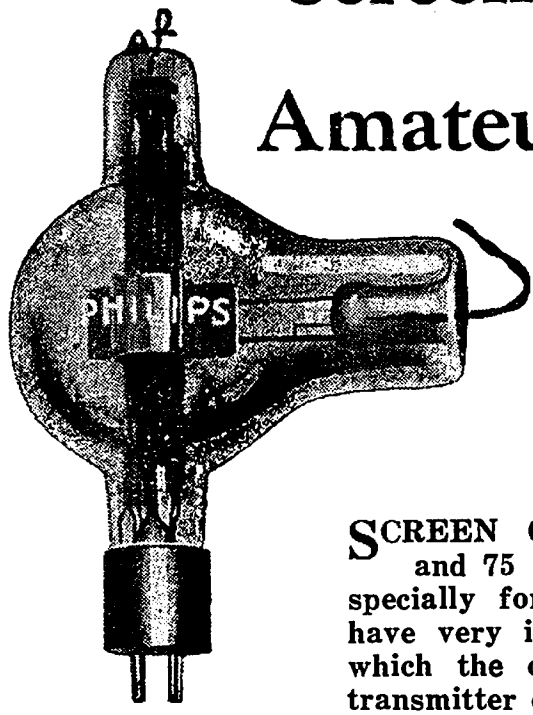
Screen Grid Valves
For
Amateur Transmitters



Types:
QB2/75, QC05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A. Type.	Screen Grid Valves QC 05/15.	QB 2/75
Filament Voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam. of bulb	50	100
Max length	160	210

*Approximate values.

PHILIPS
TRANSMITTING VALVES

Editorial

Off to the Convention

Conventional Convention

or—

The Oxford dictionary gives the meaning of "Convention" as, an assembly of persons for some common object.

Obviously, then, the W.I.A. (Vic. Div.) Convention in October-November, the peak month of Melbourne's Centenary festivities, should be an assembly of Radio Amateurs with the common object in view of solidifying and enlarging that useful organisation, the Wireless Institute of Australia.

We shall speak lightly of the W.I.A., for have we not written much in these pages which has borne fruit, and is demonstrated in the Institute's steadily increasing membership.

Kipling once wrote "East is East and West is West, and never the 'twain shall meet." There is an exception to every rule or maxim ever written, and those who attend the Convention in November will have the opportunity of seeing how the other half of the world lives, and so disproving the maxim. In explanation of the analogy we would say that the Country Amateur can paint most vivid pictures of his problems to the City Amateur. On the contrary, what DX opportunities the country man has.

As hosts to our Country and Interstate Brothers in Radio, we can show them how we live socially, physically and "electrically." All three phases are embraced in our Centenary Convention programme.

Conventional Convention, as a title for this editorial, to some may at first savour of a touch of satire. On the contrary, we should not have a convention at all, unless it is conventional.

The programme already laid down has received careful thought; giving us all the opportunities of airing our views on the several subjects which will arise at various meetings scheduled; giving us all the chance to join in various forms of collective recreation, as well as giving us the opportunity of meeting our very good friends of the Radio Inspector's Branch, and not forgetting the use of the new suite of rooms recently taken over in Queen Street.

We know the Convention will be conventional and will follow traditional lines, with just that balance of camaraderie usually found in such a hamfest.

Just one year ago many of our readers will recollect the occasion of a dinner given by the City Hams to the Country Hams. At that time, "Amateur Radio," then without that symbolic name, was in its embryo stage. We hope that, at the forthcoming Convention, those preesnt will voice the opinion that their gratefully received subscriptions to the magazine were justified. It is to be hoped that constructive criticism will be forthcoming from those present.

The first Australian world DX Contest will be finished when the Convention starts. What discussions? What "if . . . 's," what "I blew . . .," what "excuses"! Yes, the Convention will certainly be just as successful as it is conventional!

Wanted.—Artists and Short Story Writers, to brighten up our Mag. Fine opportunity for budding Hams with ability!

Two-wire Untuned Transmission Lines

(By courtesy of Westinghouse Electric and Manufacturing Co., through Alan S. Duke Pty. Ltd.)

The two-wire untuned transmission line, when properly constructed and matched with the antenna, will give the amateur a radiating system that causes very little interference in the immediate neighbourhood. With such a system, it is possible to operate a superheterodyne within twenty kilocycles of the transmitter frequency, even though the transmitter be of considerable power. This will allow duplex operation and even relaying of other stations.

Another feature of the untuned transmission line is its lack of standing waves. Therefore its losses are not as high when it is run near objects, as is the case with a feeder system which oscillates. Further, the untuned feeder line can be any length, theoretically, without affecting its operation. For these reasons the half-wave Hertz antenna, fed with an untuned transmission line, offers definite advantages if the physical layout of the radiating system will permit its use. These are offset to some extent by the fact that such a system is adapted for working only on the fundamental of the antenna, and cannot be used for even-harmonic radiation, thus preventing the use of a single antenna for operation on all amateur bands.

Much has been said about the two-wire, untuned transmission line, but little has been published concerning the construction and termination of the same. With this line, it is possible to feed an antenna located a considerable distance away from the transmitter and have line losses that compare favourably with power lines.

In the design and construction of an untuned R.F. transmission line, there are three important factors to consider: first, the impedance of the line; second, the coupling to the transmitter; third, and the most important, the coupling to the antenna. These three will be treated in the order mentioned.

Determination of Impedance.

The impedance of the line depends upon the dimensions. These are usually determined by the material the amateur has at hand; namely, the spacers, insulators, and wire. The length of the line does not enter into its characteristics.

The characteristic or surge impedance of a pair of parallel conductors which make up the transmission line, may be calculated from the following formula:

$$Z_0 = 276 \log_{10} \frac{2D}{d} \text{ ohms}$$

Where:

Z_0 = Characteristic or surge impedance.

D = Spacing in inches (centre of wire to centre of wire)

d = Diameter of conductor in inches

For the convenience of the amateur who is unfamiliar with logarithms or who does not care to calculate the impedance of the line he constructs, a chart providing quick determination of impedance of lines of almost any dimensions is given in Fig. 1. Corresponding B and S wire sizes are also shown. The method of determining the impedance of a line is as follows: Draw a straight line from the "d" scale, starting at a point corresponding with the wire size or diameter, to a point on the "D" scale, corresponding to the spacing. The point where this line intersects the "Z" scale will give the impedance. Example: A pair of No. 12 wires, spaced 6 inches, will have a surge impedance of approximately 600 ohms.

Construct the line with spacers that will give uniform spacing. Use glass, treated wood, porcelain or similar insulating material, but lighter materials are advisable to prevent vibration of the wires between spacers. Support the line so as to not change the spacing at the supports. Avoid sharp corners as they often cause reflection

at higher frequencies. At the higher frequencies—14 to 60 megacycles—make certain that the length of both conductors is the same. If it is necessary to increase or decrease the spacing of the line in order to couple to the antenna or tank coil, do this within the last two or three feet. The line should be supported so that it does not swing excessively with the wind. It is advisable to approach the antenna at an angle of not less than 45 degrees. Avoid nearby trees, wires or rainspouts, by at least three feet.

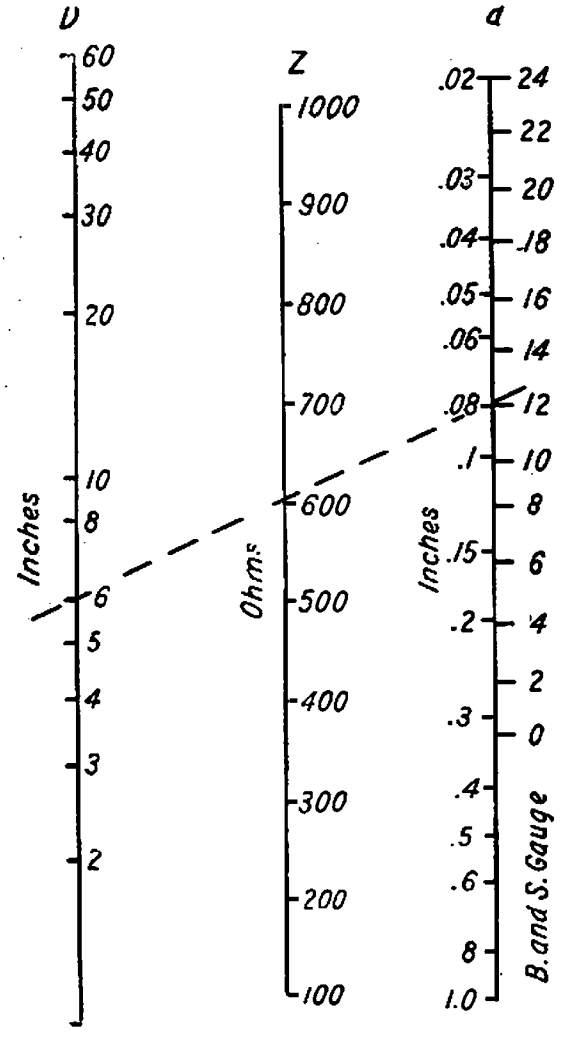


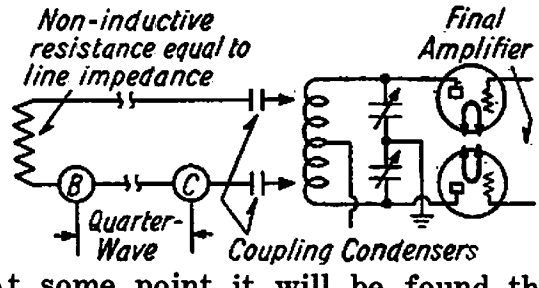
Fig. 1—Chart for determination of surge impedance

Coupling to the Transmitter.

While it is possible to effect a balanced coupling to a single side amplifier, the use of a push-pull final amplifier is recommended. Coupling is easily made by use of a pair of fixed condensers of equal capacity. For frequencies around 1.7 megacycles they should be from .001 to .01 mf., while for the higher bands, capacities ranging from .00025 to .001 will be sufficient. Their voltage rating should be such as to prevent failure and subsequent short-circuiting of the plate supply, should the antenna or line become accidentally grounded.

If possible, construct the line or a section of the line one-quarter wave long. Across the end of the line away from the transmitter, place a non-inductive resistance having a value equal to the impedance of the line in ohms. This may be a carbon resistance rod, provided it is physically large enough to dissipate the power absorbed without heating. However, it is recommended that a carbon lamp or a combination of carbon lamps, having the proper resistance value, be used, or, if finances permit, a non-inductive resistance of the woven type. It is possible to construct a resistance by winding wire on a thin flat mica sheet, taking care to slightly space the turns. This provides a resistance having very little inductance, but if the frequency be high, its use is not recommended.

A small r.f. milliammeter, 0-100 mils full scale, should be placed in one side of the line next to the resistance load. Another instrument of the same type should be placed one quarter wave-length away in the same side of the line. See Fig. 2. Start moving the coupling clips away from the centre of the tank coil in opposite directions, taking care that the distances on each side of the centre are always the same. Carefully retune the tank condenser after each move.



At some point it will be found that the instrument B and C will read alike. Should they be inserted in any other position in the line, it would be found that the current distribution is uniform and the line is properly coupled to the transmitter. The power output may be calculated since it is the power dissipated by the resistance load. The efficiency of the final amplifier will be found to be highest with the coupling at this point. If this point is passed, the amplifier will run hot and the resonance point will not be sharp.

If physical limitations prevent the construction of a line one-quarter

wave long, or if the length of the completed feeder is to be less than one-quarter wave, it is possible to use the same method with a shorter line. Merely place one milliammeter next to the tank coil, and the other at the other end of the transmission line in the same wire, then make the adjustments as specified until both instruments read the same, indicating the absence of standing waves. The maximum difference in the instrument readings when standing waves are present are obtained when the instruments are spaced one-quarter wave apart. Therefore, when spaced less than this difference, care must be exercised to see that the readings are the same.

It is important where comparisons are made between two instruments, as in this case, that reliably accurate instruments be used. Inaccuracies in the instruments may permit improper adjustments which will result in radiation from the feeder, improper coupling to the antenna, incorrect antenna adjustments; in fact, throw the whole system out so that the efficiency of the radiating system is seriously impaired.

When the proper coupling has been determined, the line may be extended to the antenna, if necessary, and attention turned to the construction of the antenna and its coupling coil.

Coupling to Antenna.

It has often occurred to the amateur who has constructed the so-called "matched impedance," two-wire line and antenna, that if he were to take the straight portion of the antenna included between the feeders, and make a coil out of it, the system should still work. This is true except that allowances must be made, since the wires as a coil will have a higher inductance than when stretched out straight. The use of a coil offers the best solution of the antenna coupling problem because it can be readily changed to match a line of most any impedance. It is obvious that the portion of the antenna used for coupling, whether it be in the form of a coil or a straight wire, must offer an impedance equal to the characteristic impedance of the transmission line. The inductance of the coil required can be easily calculated from the formula:

$$Z = 2\pi F L$$

Z = Impedance in ohms
F = Frequency in cycles
L = Inductance in Henries
π = 3.1416

Example: A coil of 13.5 Microhenries has an impedance of 600 ohms at 7,150 K.C.

"QST" published in their December, 1928, issue, a chart for the calculation of inductance, based on a well-known formula. This chart takes into consideration the shape, size and turns in the coil and allows quick determination of the inductance of a coil from its dimensions, etc.

There are several calculating devices on the market which quickly determine the inductance of a coil, taking into consideration the shape, size, number of turns as well as the wire size.

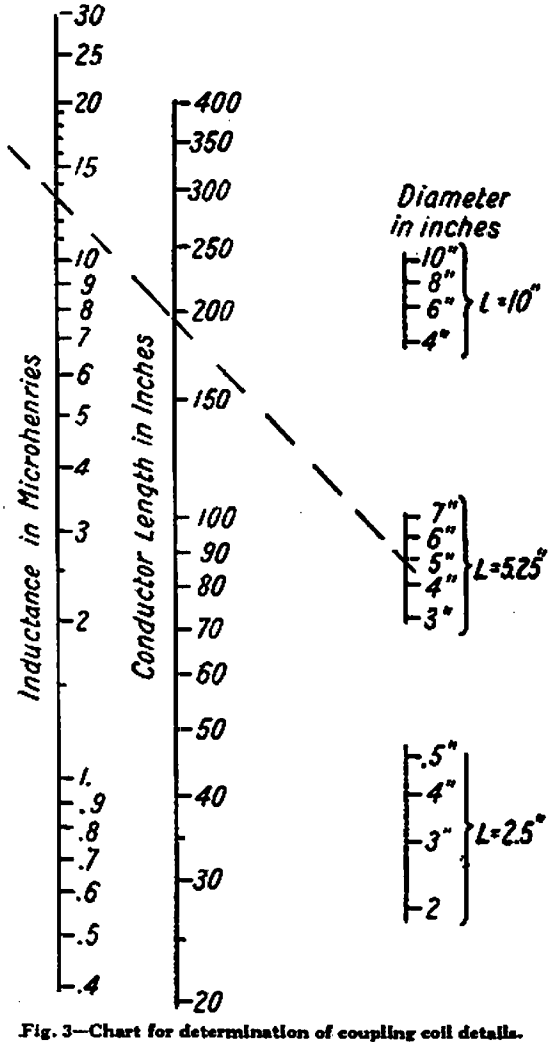


Fig. 3—Chart for determination of coupling coil details.

Since most amateurs make use of ¼-inch copper tubing in constructing coils, a chart giving the inductance of coils of several different lengths at different diameters and the total conductor length is shown in Fig. 3. The lengths of the coils shown correspond closely to the spacings conveniently used in construction of transmission

lines, and allow the line to run direct to the ends of the coil without spreading the line.

Example: A coil constructed so as to have an axial length of 5.25 inches and an inductance of 13.5 microhenries, will be 5 inches in diameter and require 200 inches or 16.7 feet of ¼-inch tubing. This means it will have approximately 13 turns and the spacing will be about 3-16 inch. In such case it would be better to increase the diameter say to 7 inches, in which case the conductor length would be about 210 inches and the coil would then consist of 9 turns spaced 3-8 inch.

The lengths of the radiating portions of the antenna need be only roughly determined since it is always necessary to make a few final adjustments. The easiest method is to make each part a length equal to 85 per cent. of one-fourth of the desired frequency-expressed in metres.

Example: 7,150 K.C. equals 42 metres or 137 feet. One-quarter of this is about 34 feet. Multiplied by 85 per cent. equals about 29 feet.

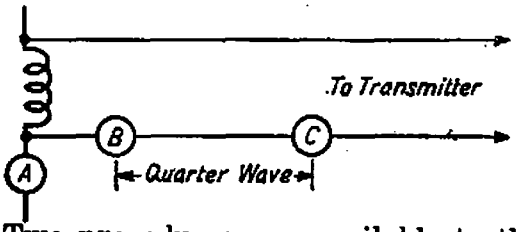
This method has proven satisfactory for antennas constructed in all the amateur bands since the variation is corrected in the final adjustment.

The antenna may be suspended horizontally between two supports, or attached to a vertical support, such as a pole. In either case, the centre of the antenna should be a half wave above ground for best efficiency. It is often advisable to place the antenna at a higher position above ground, in order to minimise screening effects such as nearby buildings or trees, but the antenna will work satisfactorily even though these precautions are not taken.

Procedure in Checking Design and Final Adjustments.

The desired adjustment of antenna coupling is the one that gives the maximum ratio of antenna current to transmission line current, with a uniform transmission current along the line. When this condition has been achieved, it will be possible to replace the antenna and its coupling coil with the load resistor, and no change in the operation or tuning of the final amplifier stage will be necessary when the change is completed. This is really the final check.

In order to obtain readings along the line and in the antenna, it is necessary to insert an r.f. milliammeter in the antenna at some convenient point, usually adjacent to the coil. Low range milliammeters should also be placed in the transmission line, one next to the antenna and another one-quarter wave-length away (or as near one-quarter wave as possible), both in the same side of the line. See Fig. 4. It is not necessary to place indicators in both sides of the line, since the system is a balanced affair and all adjustments are made in duplicate, to each half of the antenna. If the methods of design have been followed closely, the antenna coupling will be quite close to the correct impedance match and the antenna tuning close to the designed frequency.



Two procedures are available to the amateur in checking the design and making the final adjustments.

The first consists of a purely cut and try method, done by maintaining the frequency constant and making slight changes in coupling and tuning, always trying for maximum A/B radio (see Fig. 4) and uniform line currents.

The second method consists of changing the frequency and determining the point at which the system is operating. It is recommended since the required changes always became obvious. The changes should be made to each half of the antenna for correction of frequency and to one end of the coil for changes of coupling. Never make changes in tuning and changes in coupling at the same time. To do this will present the possibility of getting the system badly out of adjustment. Frequency runs should be made on the initial adjustment and after each adjustment, starting at a point well below the desired frequency in about 1 per cent. steps, until the operating point has been passed. Curves of ratios of indicators A/B should be plotted, and curves of the ratios of indicators B/C also should be plotted.

If the impedance of the antenna coupling is too high, the B/C curve will go below unity, indicating that

the coil should be shortened. Should the antenna tune at too high a frequency, as indicated by the A/B curve, it means that the length of the sides are too short. If it resonates at too low a frequency, the sides are too long. To correct this, divide the difference, as expressed in metres, by four, and add or subtract this length to each side of the antenna as may be required. Changes made in either coil length or antenna length will reflect slightly in the other, but this change immediately shows up on the plotted A/B or B/C curves, and can be readily corrected.

An example of the second method in tuning is best, given by showing a series of changes and the resulting readings.

An initial run was made on an antenna system designed for operation on 7,150 K.C. The best A/B ratio was found at 7,350 K.C., and the B/C ratio was only .4 at this point. The antenna obviously was tuned at too high a frequency and the coupling impedance too high. Each side of the antenna was lengthened the calculated amount and another frequency run made. This change brought the antenna very close to the desired frequency but did not improve the B/C ratio. The coupling coil was then shortened about two turns and another run made. This improved the B/C ratio, but decreased the A/B ratio and caused the antenna to tune at 7,300 K.C. The antenna was again lengthened by the calculated amount and another run made. This showed both an increase in A/B and B/C ratios and brought the frequency to the desired point. Since the B/C ratio was still below unity, it was decided to decrease the coupling, and this was done by cutting out one half turn. Another frequency run was made and it was found that the B/C ratio was almost unity but the frequency was still a little too high. The antenna was again lengthened by the calculated amount and another frequency run made. The B/C ratio was unity, the antenna tuned at the desired frequency, and the A/B ratio was as high as obtained during any of the runs. It was felt that since the impedance match was perfect, it was not advisable to proceed any farther. Upon replacing the antenna load with the equivalent load resistor, no changes were noted in either power input or tuning, which seemed to prove that the final adjustment was about perfect.

In course of adjustments, there is often a temptation to readjust the coupling at the transmitter end from that made during the first adjustment. This is not advisable since, in the majority of cases, the final adjustment at the antenna will bring the operation of the final amplifier back to normal.

The instruments used in making the first adjustment of the transmission line coupling at the transmitter end are the same used in making the adjustments at the antenna end. It is advisable to use low power in making all adjustments. In course of adjustment, a bad impedance match may give extremely high transmission line currents and care should be taken to prevent damage to instruments. It is advisable to use an antenna ammeter having a full scale deflection at least five times that of the feeder milliammeters. Later, when a better impedance match is obtained, an instrument having a lower full scale deflection may be substituted in the antenna. Should the lines have a very low impedance, say 150 ohms, it will be found necessary to use an antenna indicator having about the same scale reading as those in the feeders. Use of such low impedance lines is not recommended except where necessary, such as when feeding an array of antennas.

A Super Regenerative Receiver for Reception of 10 Meter Continuous Wave Signals

By VK2SA.

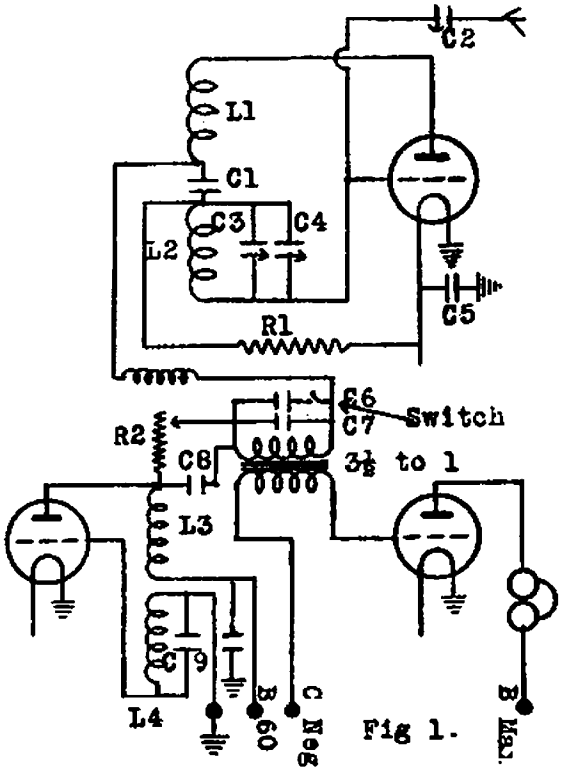
A method is shown whereby the reception of C.W. signals as well as I.C.W. and Phone can be accomplished. The action of the receiver appears to be as follows:—

The amplitude of the low frequency oscillation generated by the quenching tube in relation to the amplitude of oscillation of the detector tube is such that the detector tube oscillation is not completely quenched on the negative half cycle, or in other words, during the period of positive resistance. Under these conditions C.W. reception is possible with greater amplification than is usual with the

circuits usually employed for reception on 10 metres.

The L.C. ratio of L2, C3, C4 play an important part in eliminating background mush when the set is in the condition for receiving C.W.

In order to place the receiver in a super regenerative condition for



phone reception, condenser C6 is inserted in parallel with C7 by means of switch SW. This reduces the reactance offered to the low frequency oscillation. Tuning of C.W. signals is not critical and reaction control remarkably smooth.

All tests have been carried out with VK2YC on C.W. Owing to the absence of VK2 Ten Metre phone and I.C.W., all tests were made on 11.3 metres, which is the 4th harmonic of a Sydney commercial station using I.C.W.

The idea may be of interest to those who already possess a 5 metre super regenerative receiver and are desirous of working on the 10 metre band.

CIRCUIT CONSTANTS.

C1.—.00025 mfd.
C2.—3 plate midget.
C3.—7 plate Wetless (Tuning).
C4.—9 plate Wetless (Band Spread).
C5.—.002 mfd.
C6.—.02 mfd.
C7.—.002 mfd.
C8.—.5 mfd.
C9.—.002 mfd.
C10.—1 mfd.
C11.—.001 mfd.
L1.—3 turns 1⅜ in. diameter.
L2.—3 turns 1⅜ in. diameter.
L3.—1,400 turns.
L4.—900 turns.
R1.—2 megs.
R2.—50,000 ohm.
RFC.—60 turns on ⅜ in. former.

Annual Convention.

The Annual Convention of the Wireless Institute of Australia is to be held in Melbourne from October 29th. to November 3, 1934, and it is expected that quite a number of Interstate visitors will be present. To ascertain the exact number who will be present, any member desirous of being in Melbourne for the Convention is requested to communicate with the Secretary of the Division of which he is a member, stating whether he will be requiring accommodation. With a view to lightening the expenses of the visitors, some of the members in VK3 are prepared to arrange to accommodate one or two of the visitors at their own homes.

The Centenary celebrations will be in progress at the time of the Convention, and it should be an opportune time for members of other Divisions to be present.

The Organising Committee has arranged an attractive programme of entertainment for the visitors and is as follows:—

October 29: Visit to Research Laboratory of the Postmaster-General's Department.
October 30: Combined Meeting of all Sections, at which the members will be officially welcomed and introduced.
October 31: Convention Dinner.
November 3: Smoke Night.
November 4: Picnic and Cricket Match at Fiskville, Beam Centre of A.W.A. at Ballan.

The evenings of November 1 and 2 are open for the visitors to make a tour of inspection to the members' shacks, should they so desire.

B.E.R.U. Notes.

From VS6AQ, via VK3EG.

Conditions here on 14 M.C. very bad, only VU stations being heard, but only on 7 M.C. Plenty of VK 2, 3, 5 can be heard and QSO round 1400 G.M.T., although static is rather bad.

Federal Headquarters Notes

Fisk Trophy Competition.

There seems to be a certain amount of misunderstanding about the Fisk Trophy Competition, possibly because when the rules were published in the November "Amateur Radio," the circulation was not so great.

A little over a year ago Mr. E. T. Fisk, of A.W.A., generously donated a fine trophy to the Federal Executive, to be competed for by the State Divisions of the Wireless Institute of Australia. It was decided to arrange five contests having intervals of about six months, and a set of rules were made to govern the competition. Up to the present two contests have been held, and the third, which will probably take place during December, is being decided. The rules of the competition permit the trophy to travel from State to State as the various States win a contest, and a system of points for an aggregate to decide the outright winner upon the conclusion of the fifth contest.

It must be clearly understood that the Trophy is not for competition among individuals, but between the State Divisions. Each contest arranged sets out how the various State Teams are decided, and these are made to give the State of small numerical strength an equal chance as those more fortunate.

Each State Division Council has been requested to provide prizes for the leading competitor among its own members, to create individual rivalry and interest.

If each council does this, it will make extra keenness among its own members, which is likely to make that State a winning one and bring the Trophy to the Club-rooms. So far two contests have been held, the first a 5-point relay, won by Victoria, and the second a QRP contest won by Queensland. The full results of the Competition are given with the results of the QRP Contest last month.

You will notice a photograph of the Trophy on this page—would you like to see it in your divisional meeting room? Yes—well get into the next contest and put your State on top. The rules of the next contest will appear in these pages shortly, so get ready to take part as soon as you read them, and put your station on the air for the duration of the contest.

State Divisional Councils are asked to organise, give their members all the help possible, and what is very important, provide prizes for good performances among its members.

The Fisk Trophy

The third leg of the Fisk Trophy Competition will be a six-point relay contest to take place between December 15-23, 1934. Watch for rules and information in November issue. GET YOUR GEAR READY!

Don't post QSL cards with insufficient postage. It is rather annoying to the recipient.

Personalities in Radio

G. F. PALMER

Who Owns and Controls

3AK MELBOURNE
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Two Important B Class Stations. Noted for their High Grade Entertainment and Offering Exceptional Facilities for Advertising

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Operating and Experimental Section

Conducted by VK3WY.

Last month we asked for logs, to enable us to give some account of DX conditions. The response has not been overwhelming, but sufficient data has been sent in to let us give some idea of the conditions pertaining to VK3. Unfortunately, no data is available for other States.

Maybe you are rather diffident of sending in a comparatively small log, or perhaps you have not got the time to write one out carefully. This need not worry you, however, as the information is all we worry about, and we don't mind if it comes in small doses or large doses.

CONDITIONS IN VK3.

14 M.C.—Europeans have started to come through on this band from about 23.00 to 01.00. So far, the easiest contacts, seem to be the U.S.S.R. and other Eastern European countries. As our correspondent remarks, this certainly seems FB in view of the contest ahead.

7 M.C.—Early morning DX on this band seems to be definitely improving and a number of Europeans and a few North Africans have been worked. In the early evenings (from 17.00 to 21.00), KA, AC, OM, K6, 7, VPI, 4 and 5, W and VE have been worked and later (from 22.00 to 02.00), VS6, 7, 8, VU, PK, J, W and VE seem to be the best DX.

It would appear that DX generally is just looking up at the right time, and with a bit of luck we should see some hefty scores next month.

OPERATING.

Good operating plays a very vital part in our amateur radio, but, unfortunately, it is one of those things which any of us are apt to gradually slip away from without quite realising it. To have examples of both good and "punk" operating brought before our notice occasionally should help to rectify this condition—hence the article which follows:—

PUNK OPERATORS—AND HOW TO BECOME ONE.

Necessary qualifications are that you must:

Send decidedly more than three CQ's and only sign once after the 56th.

Answer a CQ-VK5 call if you live in VK3, or a CQ-Europe called by a Yank or Zler. It doesn't matter—it is all the same to him who answers.

Call CQ at least five times faster than you can read. It shows that you can at least send. Better still, send CQ very carefully and then your call as fast as you can—nobody wants to know what it is, anyway.

Make sure that the other chap knows that you received him OK by sending R R R R R R INT INT INT solid. It is far better than just sending "R," which means "Everything received."

When he is too fast for you, don't forget to tell him that he was under heavy QRM, or started to QSB all of a sudden. It is better than admitting that you can't read him at all.

Send at 15 w.p.m. with the bug set at 46 w.p.m.

Never twist the dial after finishing up a QSO. The lad who has been sitting on you can write.

Surely somebody else can add to this list.

Are YOU self-conscious, old son?

Conducted by VK3JJ.

INTERNATIONAL 28 M.C. CONTEST.

The Radio Society of Great Britain has sponsored a world-wide contest to be held over a period of twelve months, and open to all Amateurs. The winner will be awarded the R.S.G.B. International 28 M.C. Contest Trophy, which will be held in perpetuity, and Special Certificates will be issued by the R.S.G. to the first ten stations in the final list.

Contest Rules.

1. The Contest is open to all licensed radio amateurs.
2. The Contest will commence at 00.01 G.M.T., October 1, 1934, and will conclude at 24.00 G.M.T., September 30, 1935.
3. Licensed power must not be exceeded.
4. Contacts may be established at any hour and on any day during the contest period.
5. One point will be scored for each completed 100 miles of contact with a specific station (e.g., contact with a station 99 miles away scores no points, contact with a station 658 miles away scores 6 points). All distances will be measured by a Great Circle line between stations.
6. A minimum signal strength of QSA 3 must be recorded before a contact counts for points.
7. In computing his final score a competitor may claim points for each different station worked once during each calendar month.
8. Proof of contact in writing may be required by the Contest Committee.
9. The decision of the President of the R.S.G.B. will be final in all cases of dispute.
10. Entries must reach the Secretary, R.S.G.B., 53 Victoria Street, London, S.W.1, not later than November 15, 1935.

Now here is a test which should attract the attention of every ham in Australia with an active interest in Ten Metres.

To create interest and induce competition, "Amateur Radio" will publish the points claimed each month, so

send your score, together with any notes or news, to your Divisional Representative before the 15th of the month following. If a representative has not yet been appointed, forward them to the writer.

How many times will YOUR call top this list?

VICTORIAN NOTES.

Activity has increased on the 28 M.C. band, and many local contacts have been made during the past month, but no Interstate signals have yet been heard.

Although 3NM is still unsatisfied with his output, he is putting out a fine signal and is usually the first to start up. He is using three stages, with a tri-tet 59 C.O., RV218 buffer and an 800 in the final, but is building a separate self excited transmitter to compare the output.

3DM is having trouble getting his receiver adjusted to this band, while a bad hum on the higher frequencies is claiming the attention of 3DP.

3BQ has heard most of the locals at good strength on his super-het., but has not yet had time to tune the transmitter down, owing to Reserve skeds which keep him busy on Sunday mornings. 3YO, who had difficulty locating the band, has not yet been heard.

In the outer suburbs, 3RJ and 3HK have had several QSO's, but although their signals are R4/5, 3OF and 3JJ, who are located close to the City, have been unable to raise them. Half wave 7 M.C. antennas worked on the harmonics are used by the latter two, while 3RJ and 3HK are using half wave for 28 M.C.. so it is possible that their aerials are giving strong low angle radiation, requiring less bending for good signals locally. Some experimental work is needed in this direction, and an antenna system certain to produce strong local signals will be welcome. (See future articles in "A.R."—Ed.) 3RJ is using an ultra-audion circuit with about 19 watts input to a 210, but manages to get a steadier and cleaner signal than most of the hams who have tried it.

A five metre field day during the Convention week has been suggested, and it is hoped that the 56 M.C. gang will get to work on those portables and trans-ceivers within the next few weeks.—VK3JJ.

Divisional Notes

VK3 Key Section Notes.

ZO—VK3BJ.

At the section's meeting on September 4, we again had a good muster of the gang. It was regretted that, owing to an alteration in the shifts of telegraph operators, 3RJ was forced to resign from the office of chairman, as he would be unable in future to be present at meetings before 9 p.m. A comparatively new member, Mr. Cook (3OX), was elected as his successor, and we wish him every success in this capacity. A new member, 4FK, now one of the staff at the P.M.G. Research Laboratories, in Melbourne, was welcomed, and it is to be hoped, will shortly be on the air with a VK3 call-sign.

During the course of the October meeting a debate will be held. The subject will be: Should newly licensed amateurs be confined to a certain frequency band for a certain period of probation, with the object of reducing QRM? 3ML, 3BQ and 3PX will be for, and 3RJ, RVW and 3JO against.

A word of thanks is due to the secretary of the Phone Section, 3JB, for the splendid framed photo of two old-time hams' stations (one is G2NM), which he has kindly presented to the Institute.

Conditions on the 40 metre band are improving gradually, as Yanks are fairly easy to raise after sunset, and a few VE's, KA's, K6's, etc., are coming through at good strength. VE5JC was QSA5 R6 on my punk receiver even. In the mornings a few Europeans and East Coast Yanks manage to struggle here, but are hard to raise—no doubt due to the heavy QRM over there. When they are contacted, the reports given by them are usually fairly good. It is pleasing to note the absence of the Russian Commercials from this band. Apparently they have at last decided to abide by the International Regulations. Hi!

Energetic VK3's heard in the mornings are: 3EG, 3BW, 3JQ, 3CW, 3ZF, 3KX, 3LN, 3XQ, 3LQ, and 3DM.

4EI has had quite a good time lately raising ZS, ZT, ZE, etc., and has given them reports of R6 and R7 when they are not even audible down

here. Must therefore move to VIB one of these days, hi!

My apologies are due to "Bulldog" 3XQ for the mistake in last month's notes. What should have been put was that he was on the air at 6 nearly every morning, but could not raise anything.

3FY is building a MOPA for short-wave work—45 osc. and 46 p.a., and expects to be on the air with it shortly.

3XJ is still building his first transmitter and is experimenting with grid modulation.

3WQ just manages to get on the air occasionally to get PDC reports from a 45 in a TPTG.

3ZJ is rebuilding to MOPA—45 osc., 45 p.a., with Heising modulation.

3DT experimenting with B-K oscillators on ultra-high frequencies. How about some dope on this, Val?

3JJ still rebuilding to Xtal in his spare time.

3OB is using a new Xtal rig—59 osc., 46 dubler and 2-210's in push-pull final. He tried a tri-tet, but did not have any success with it. Will have another try later on.

3YO is vainly trying to find ten metres. Guess you are very greedy, wanting ten om.

3WG is too busy with W.I.A. work to find much time for experimenting. However, he is managing to find time to get some 5 and 10 metre gear together for the forthcoming tests.

3KO very QRL but just able to spare time to continue rebuilding—should be on again very soon.

3FJ is also very QRL swotting for exams and does not get much time to go on the air these days.

3LN tried 40 metre phone for the first time in six months the other day and worked 3WC, but did not get much of a go owing to QRM from 3OB and 3BJ, hi!

3PX (ex-TJX) installing gear at new QRA in St. Kilda and also rebuilding for the contest.

3MR is going all out for the 852 trophy. Now has 102 ft. mast with full-wave 7 M.C. Zepp. hitched thereto. Has just completed rebuilding for tests and, by means of switches, can change from 40 to 20 in about ten seconds.

3DP comes from the place where all good hams come from—he certainly knows his bacon (he is Hutton's chief electrical engineer).

CORRESPONDENCE.

Regarding the N.Z.A.R.T., for whom I am representative in VK, I would like you to publish the following in "Amateur Radio." The subscription rate is 7/6 for 12 months, or 3/9 for 6 months. This includes the official organ, "Break-In," for period of subscription. Anyone requiring further particulars may communicate direct to Hon. Secretary, P.O. Box 277, Auckland, C.1, New Zealand, or myself. The N.Z.A.R.T. have now under revision 1934 official N.Z.A.R.T. Radio Call Book, containing complete list of all New Zealand and Australian Amateur Transmitters, together with other useful data for the amateur. When completed, it will be sold at approximately 2/-.— H. W. BLUE (VK2YI).

NORTH EASTERN NOTES.
ZO—3EG.

Conditions on 7 M.C. have greatly improved over the last month again and many DX sigs. are coming through well. Although contact with Europe is difficult as yet, the Japs after 10 p.m. are easily QSO and there are plenty of them available. An odd PK shows up also at this time and other Asiatics, especially VSU and VU, about midnight. South Americans are being heard well here and HCIFG, XPDC on 7020 K.C., is often a good R7 about 5 p.m. Early morning Europeans are very strong, but, as yet, only a few have been worked, and these about 7 a.m., the majority as yet appear to be working local DX and the QRM there is pretty terrific. WGBTI reports hearing VK5SU, VK3KX and VK3EG at 21.00 G.M.T., so it should not be long before the Europeans are FB again. F3AL was worked here at 7.15 o'clock one morning and there seems to be very little possibility any earlier in the a.m. as yet.

Regarding Yanks, they come through wonderfully now and there seems to be a peak at 5 p.m. to 7 p.m. and again between 10 and 11 p.m.

The locals fade early in the night and day conditions have been most unsatisfactory indeed. VK2VQ has a wallop here, also 2OH, 2HF are amongst the strongest. VK4RM comes in all hours of day and night and works plenty Yanks by the sound of him.

5FG has a nice sig., and seems to share the DX with 5LB and 5BC, who both make a noise here. There seems to be greatly increased activity in the West, no fewer than a dozen of VK6 heard here during the week. VK6SA, VK6FO very consistent and several Yanks called you both the other night, but N.D. Too bad!

Had a visit from the gang, 2OJ, 2YI, 2DQ and 3NY the other day. They arrived after all the hard work in putting up a new mast for 70 ft. vertical Zepp. was done, but they weren't in at the kill when some local live stock got in and got mixed up with the guy wires.

As I finish these notes I find that Europe can be QSO from 2 a.m. here, having had a two-hour QSO with G2QO, also worked G6OS and G6UF the same night, so conditions seem on the mend.

VK2OJ has rebuilt and now on more regularly with side-note.

Have been trying out different directional systems here. Anyone got any dope? Tons of room, but no dope on beam systems

WESTERN DISTRICT NOTES.

3OW—3HG.

The 3500 k.c. band is still being used a good deal, particularly by fone stations. Conditions on 7000 k.c. are, however, improving rapidly, and a number of the boys are moving down there to chase the DX, which is coming through well, particularly the Europeans, in the afternoons.

3HG also heard one of those rare birds, a South American, a few days ago, but did not get a chance to call him.

3OW spent a few days with the Warrnambool gang recently. 3XI and 3JA have been getting their rigs on the air again, with a view to taking part in the Centenary contest. 3XI tried out a pair of 50-watters in the final stage, but was not satisfied with the radiation, so decided to re-build the 4-stage rig, the only CQ from which had landed a Yank. 3JA has a RV258 waiting to be tried out. 3PG has been putting in some excellent DX work on 40 mx, with his 3 watts. 3HG still going strong with fone on 80 mx. 3OW is installing an ML dynamotor, which is expected to arrive from England in a week or so.

3NZ very consistent on Reserve skeds; 3CG also coming along well with Reserve work.

3NY is at present in Coleraine, and 5KL is reported to be taking up work there also, so the ham population in the district will now be six, for a short time at any rate.

3JE still busy with the BCLs, and does some 200 mx. work on Sundays.

The Centenary contest promises to be a huge success, and if a few South Americans show up there will probably be a big run on W.A.C. certificates.

NORTH SUBURBAN.

Radio Club 3FY.

At the half-yearly meeting of the above club the following officers were elected for the ensuing six months: President, Mr. H. Goldberg; vice-president, Mr. G. Dowd; hon. secretary, Mr. W. Wonder; assistant hon. secretary, Mr. A. J. O'Brien. The Executive Committee consists of Messrs. Goldberg, Dowd, Wonder, O'Brien, Gleeson, Richardson and Smith; the Technical Committee, Messrs. O'Brien, Dowd, Richardson and Gleeson; librarian, Mr. J. Corcoran; Q.S.L. officer, Mr. R. Richardson; delegate to fone section of W.I.A., Mr. W. L. Wonder; delegate to key section of W.I.A., Mr. R. Richardson; programme director, Mr. A. Stow.

The meetings of the club are held every second Monday at the club-rooms, 354 Rathdown Street, North Carlton, and the meetings for October will be held on the 1st, 15th and 29th. Interesting lectures have been arranged, and all interested in experimental radio are invited to attend.

At the time of writing, members are visiting several "B" Class stations, and it is hoped that in the near future arrangements can be made for further visits to some of our prominent amateur stations.

To aid the club's funds, a house party was held at the secretary's residence on a recent Saturday evening. Members rolled up "en masse," and the most outstanding item of the evening was the supper consumed by our good friends Bob Richardson and John Masson. Both ate 9½ sandwiches, 27 sausage rolls—hot and piping—1½ dozen cream cakes, and three bunches of spring onions. The lubrication was by "Marchant's," and, as a dessert, Vegetable Laxative Pills were thoroughly enjoyed. The party left well after midnight, and, much to the writer's surprise, several of the "gang" were heard over the air at 8 a.m. through the broadcast transmitter mike.

A 8-stage crystal-controlled transmitter was recently constructed for the 200 metre band, and at the present time a new short-wave transmitter is under construction by members at the club-rooms.

Full particulars regarding club activities will be supplied by the hon. secretary, Wm. L. Wonder, who, owing to matrimonial disturbances, now sleeps out at 248 Raglan Street, Preston, N.18.

SHORT WAVE SECTION.

ZO—VK3XJ.

During the month of September a general improvement in the attendance at the meetings has been noticed. The Section now has an active membership of twenty members, but there is still room for more members.

The popularity of the visits of inspection arranged by the Section is shown by the number of members of other Sections attending.

By the time these notes are published a visit will have been paid to the Central Telegraph Office of the Postmaster-General's Department.

At each Section meeting a member reads a paper on a subject of interest to the Section, and at its conclusion a general discussion is entered into, whereby the knowledge of the members is materially benefited. It is from this Section that the step towards obtaining an A.O.P. Certificate is taken, and a great amount of the necessary ground work is obtained by these discussions. I urge that

the members or intending members to the A.O.P.C. Class make every endeavor to attend these meetings and join in the discussions and visits. The address at our next meeting, to be held on October 10, will be delivered by Mr. Quick.

At the meeting held on September 12, 1934, the Section Representative to Council, Mr. Mildern, placed a suggestion from Council regarding the presentation of photos and other articles of historical value by members to the Institute. VK3JB, of the 'Phone Section, has presented suitably inscribed and framed photos of G2OD and G2NM following upon the lead set by VK3WG some months ago. This Section is investigating the question of framing graphs of observations taken by the Section on European short-wave stations during 1926.

Mr. Mildern also reported upon the programme of entertainment being provided for the Annual Convention to be held in October, 1934. The members showed that they were wholeheartedly behind the programme, and this Section should be well represented at all the functions.

VK3 Phone Section.

There was a fair attendance at the Phone Section meeting on August 28, at which the following transmitting members were present:—3CB, 3DH, 3UI, 3SB, 3HF, 3BH, 3KE, 3LU, 3HK, 3YJ, 3PA, 3RO, 3RI, 3FY, 3OY, 3GK, 3LM, 3OV, 3CR, 3LN, 3JR, 3XJ, 3LD, 3GY, Allocation Committee members, Mr. J. Kerley and Mr. G. Lahiff.

During the meeting an appeal was made in aid of the Australian Inland Missions. The amount of 13/- was raised, and the following members agreed to attend the meeting on behalf of the Section: 3XJ, 3HF, 3JB and Mr. Herley.

The usual amount of business was handled during the meeting, including a letter from "Radio Program." After the allocations had been given out, the chairman began to distribute the crystals put into the "pool."

Personalities.

3CB has been putting over a few turns in the form of sketches, one notable one being "The Return of Tomkins."

3PA intends improving his antenna system. The transmitter, after two years' constant service, still uses Class "B" audio, and he intends to stick to it. If anybody wants to know how Class "B" goes, have a listen to P.A.

3FY are still working on their new transmitter, which is a CO, buffer and P.A. job.

3BW intends to be QRO very shortly.

3DH is still recording on aluminium and shall be heard working simultaneously on 265 metres and 5 metres.

3HF is rebuilding at present.

3BY occasionally has a woman announcer now and is putting over fine stuff, as usual.

3SB gives the BCL's at Oakleigh a fine "background."

3GK makes Sunday lunch sessions lively.

3BH has been trying out new microphones.

3JB uses crystal pickups and crystal microphones, and is getting good reports from new QRA at Brighton.

THE PHONE CONTEST.
(By Observer.)

Now that the first stage of the phone contest is over, a few remarks on the competitors should not be out of place.

The first station was 3DH, whose xmission was badly interferred with by 2HD. Ivor, however, put over a good performance, and as he had shifted his QRA only a week previously, put up a fb effort.

3AM followed, and with a nicely balanced programme, kept to that high standard one expects from Arthur, although the high notes of his recordings were lacking. Speech was excellent.

3GZ Geelong was disappointing. Frequency modulation appeared to be the trouble. Mike strength was considerably below that of his recordings, and a YL announcer did not improve matters. A bad hum was noticeable when the mike was switched in.

3JB was heterodyned by 5RP and that plus QRN made him hard to follow, there was also a tendency to overdo the bass notes.

3LU's strong sigs. were easily readable three bad QRN. Bass notes were lacking below 130 cycles, modulation was deep, but there was no trace of over-modulation. Carrier wave and speech were good.

3SB was very weak and on account of QRM and QRN was not understandable.

3RI's sigs. were almost as loud as 3LU's. 3LU, by the way, was, with the exception of 3BY, the strongest of all the competitors. RI's bass notes were inclined to be weak, whilst the higher frequencies were definitely lacking. Speech was perfect. Programme was well chosen and there

was no trace of over-modulation.

3JR, slightly stronger than RI. Bass notes good with a tendency to resonate at about 90 cycles. Upper register on recordings slightly worse than 3RI. A bad fault was harmonic distortion, which was considerable. Speech was harsh, caused by an even greater degree of harmonic distortion, and it was also over-modulated.

3HK, strength about that of RI. Frequency response fairly level from about 100 cycles to 3500 cycles, with sharp cut off at either end, slight harmonic distortion, mike good

3CB was decidedly weak, about equal to 3SB. It was extremely hard to identify the station. Speech was below the strength of records, and a YL announcer did not help things.

3BY, the strongest station on the air. Frequency response level from about 200 to 3500 cycles, below 200 cycles there was a gradual falling off. Upper register was outstanding, giv- Upper register was out standing, giving a perfect naturalness of reproduction. Piano record reproduced with excellent fidelity. Speech was excellent with perhaps a slight hissing of sibilants (hi, George). There was a decided hum in the carrier.

3LN about equal to 3DH in strength. QRM and QRN affected reception, quality fair, although bass was overdone. Speech good.

3BW Portarlington showed a point or two to the other country stations and some of the city ones. Strength slightly more than 3DH. Frequency response level from about 90 to 3000 cycles, above which there was a sharp cut off. Speech excellent, carrier o.k.

3TM, strength equal to 3RI, fair quality, bass overdone, higher notes of records lacking. Slight distortion in speech.

3KW's effort was on a par with GZ. Frequency modulation and bad hum in carrier were the main faults. Speech was very mushy and very much below the strength of recordings.

3HF, strength about equal to 3JR, but mike strength considerably lower than records. Speech over-modulated, bass very heavy, sharp cut off above 3500 cycles.

3OY, strength equal to DH. Speech very thick and blurred (sounds bad OV). Bass overdone, high notes good. At the beginning of the programme, the mike was louder than the recordings, but about halfway through it dropped to the same level as the records.

3BT equal to RI in strength. There was a decided click when the mike was faded in and out. Frequency response level from about 100 to 3000 cycles. Away was noticeable above 3000 cycles.

3PA strength as JR. Good performance generally, slight harmonic distortion, mike slightly weaker than records. Carrier o.k.

3ZO was over-modulated. Speech strength below recordings, decided too deep to follow easily, mike lack of high notes.

3KE, strength same as RI, frequency response level from 150 to 3000 cycles, sharp cut off above 3000 cycles, slight distortion, and speech excellent.

3XL, bass overdone,, speech clear, slight hum in mike.

3RG Castlemain was only slightly better than the two Geelong stations. His recordings were fair, but speech was badly distorted and hard to understand. Over-modulation seemed to be the trouble.

3FY, strength equal to RI. Frequency response level from 150 to 3000 cycles, with a rise on the top end and a decided falling away at the bottom. Speech good, but below strength of records, slight harmonic distortion, and carrier was a bit wobbly.

3BH , slightly weaker than RI. Speech good, higher frequencies on recordings lacking.

3GK, strength almost equal to 3LU, speech clear and transmission generally, on a par with 3RI.

3YJ, strength a bit lower than RI, bass slightly overdone, with higher frequencies weak. Speech excellent, with slight background.

I failed to hear 3WF, owing to a breakdown in my power supply.

By courtesy of "The Bulletin" (N.S.W.) we republish the following from its issue 18/7/34.

"The 'talent' of a 20-year-old clerk in England who 'secretly worked a wireless trasmitting set for 12 months' was effusively praised by magistrates and solicitors. No talent is called for in putting together a contraption to spread radio impulses in surrounding receivers. Textbooks exist by the thousand, and in 1934 any schoolboy can follow diagrams. To excuse piracy on the grounds of 'talent' is grossly unfair to licensed radio experimenters."

SOUTH AUSTRALIAN VK5 NOTES

By Eric Halliday.

The transmitters' section meeting this month took the form of a lecture by Harry Wheeler, B.Sc., VK5HW, on antennas and antenna feed systems. Interesting data on untuned feed systems was given to the large crowd of hams present. (What about some articles.—Our Ed.)

At the September general meeting on September 12, Colonel Viney gave a lecture on "The Landing at Gallipoli," which was appreciated by all present.

5MY turned himself into a personality announcer over 5RP on 200 m. the other Sunday. 5SU still finds time to entertain BCLs on 200 m. on Sunday. Is trying a Class B final amplifier in the perk. Malcolm is still the live wire behind the R.A.A.F.W.R. in VK5. 5RT has now struck a balance between married life and radio.

5NR now has a new QRA at 11 Ninth Avenue, St. Peters. Bill is the latest of the local crowd to have caught the 200 m. fever. 5MV and Bill have burnt the midnight oil quite a lot lately building the 4-stage c.c. rig with p.p. final. 5LD is back on 40 m. again working plenty of Ws. 5WP is at last going to relegate his famous old T.P.T.G. perk with the 210s. Although Bill has worked heaps and heaps of DX with his old rig, he thinks that his new single sig rx deserves a better brother. The new rig will be a self-contained job in a frame about 6 ft. high.

5JA has started to build a 7-tube single sig. It looks as if nearly all the active hams here will have these fb rx before long. 5GR has been working plenty of DX on 20 m. 5MV's mopa has been lying idle while he has been helping 5NR build his 200 m. rig.

5BR, the Blackwood Radio Club, has been doing quite a lot of good work with 80 m. 'phone. Regular skeds with the 2, 3 and 7s are being kept. Rig in use is 45 c.o., 46 buffer, with p.p. 45 in final. High level Western Electric grid modulation is used in conjunction with a 2-stage speech amplifier and a condenser mike. The aerial is a Marconi with universal coupling. One of the 40 m. sticks recently busted, but the story concerning it would fill half a dozen issues of "A.R."

5RX is still playing with his tritet with 210 in final. The bias is causing all the trouble now. 5JO had a spell from radio recently when he was laid up with influenza.

5GC is still working DX. Recently clicked with VP1AM. Another new country o.m.? 5LG is still chasing YLs in the Western districts of VK3. So, o.m., what about giving radio the break it deserves. 5MZ got a surprise at the last meeting of the Institute when he received a card made of copper from a W.

The stork recently brought 5BY a second op. Congratulations, Dougal, from all the local boys, and we hope that you will bring him up to be as good an op. as you are. 5LB has an R max plus T9 sig on the 7 m.c. band. Ought not to have any trouble in working DX with that sig, o.m., but the bumps are at times bad. 5KB is another with a nice hefty sig and bad bumps on 40 m.

5WB has been putting out a nice fone from a rig which consists of a 59 tritet oscillator and p.p. 210's modulated by p.p. 2A8 in Class A.

5MH and 5MK often have rag chews on 40 m. fone on Sunday. Both fones are fb. 5MK's rig is a super QRP outfit, using about a fraction of a watt. Other 40 m. fones heard are 6ZC, 5WW, 5KG, 5PK, 5MZ, 5ZY and 5AR. The last-named is making himself unpopular with some of the chaps through coming on at night during DX hours and playing records. There are not many BCL's on 40 m., o.m.!

5RF now has a 210 going in a Hartley to the tune of 875 volts on its plate. Poor tube! Colin says that he is satisfied now, as he can burn up a pencil off the tank coil. 5QR—"The kidbeater from the bush"—was in the city during the school vacation for a high-power holiday after being QRP on batteries for months. 5RF, 5RT, 5WR and the writer managed to spare a couple of nights to show him round the city. Hi! Hi! Rig has taken a low-power 80 m. perk back with him to his new QRA at Jabuk. Is thinking of selling his mo-bike and acquiring a motor generator. Two other visitors to the city the other week were BERS 195 (Eric Trebilcock), of Moonta, and 5FG, of Balaklava. Although Eric is VK's champion receiver, he is not going to sleep on his laurels. He is still as keen as a razor on dragging in DX.

The call VK5FBX has been allotted to and will be used by VK5PK and VK5FB during a caravan tour they will be making, commencing from Wilmington on September 29, and travelling via Mildura (September 30), Wagga (October 1), Canberra (October 2), Sydney (October 3 to about October 12), visiting Newcastle before leaving Sydney on October 12 for Melbourne, via coast road; arriving in Melbourne on October 18, and staying until October 24; visiting Ballarat and Geelong about October 21; then making a fast trip home via Mt. Gambier and Adelaide. We will use 'phone and c.w. on 40 and 80 mx., using Ever Ready B bats. for power supply.

WESTERN AUSTRALIAN VK6 NOTES

By VK6CP.

Since last issue not much activity has been shown by VK6 hams. The meetings have been only moderately attended, and it seems that nothing short of a plug of dynamite will wake up some of our gang. At the last general meeting 6JS came forward to give the boys a very fine talk on the latest in all wave superhet. JS handled his subject in a masterly fashion, and by means of graphs, etc., explained everything very fully. A hearty vote of thanks concluded the evening.

Ten-metre and five-metre work is in the offing, but not much will be done until after the Centenary contests.

The AOPC classes are in full swing, and as the President, 6BN, has this matter well in hand its success is assured. All the same, boys, we must all do our bit.

DOINGS ON THE BANDS.

Just at present conditions seem to be betwixt and between, with the 80 mx going out and 40 trying hard to sneak in.

QRN on 80 is troublesome, and 40 is useless between the hours of 7 p.m. and 9 p.m., with occasional bright spots before and after those times.

Only QRO stations are getting anywhere, while the humble 15-watt input tries vainly for a QSO.

On Sunday mornings at one time many moons ago VK6 was a hive of industry, but now, alas, one might hear one station on the air.

Ws can be heard in the early daylight hours, and PKs, KAs in the early evenings, all on 40, with the usual bunch of Eastern Staters.

On 80 on a recent Sunday evening 6-fone stations got going in a circle, but, taken all round, the results were poor. 6RA and FH were consistent, but of the others not much need be said.

Boiled down, the activities are as follow: 6RA on 80 with fone. 6FO on 40 in two places looking for contacts. 6PC forsaken the 80, and vainly calling CQ on 40. 6CP of Meekatharra, and 6FM of Wiluna, trying to click on Sundays; also 6XL somewhere in the Mulga doing his stuff. 6RW heard once on 80 with fone that was only a shadow of his one-time fb goods. Heard a station calling for 6GS one night, but George was not located on the receiver here. Let's hope you are perking, o.m.! 6FL convalescent again, and threatens big things. Frank is now QRA at Albany. 6KB having trouble with his Zepp, and threatens to sell up, but I don't think so! 6DH heard occasionally on 40 trying to QSO VK5 in daylight. Of the rest, little can be said; and boys, when you decide to do some punching I might be able to write you up. Until then our space will be very small, as not being a commercial editor I have not the gift for telling fairy tales.

6FL reports having got all his gear rigged OK, also that 6OR is in trouble with his Delco Jenny. A hefty QSO on fone between 6FL and 6CP on Sunday, September 9th, on 40, when FL signals were QSA5, R4 on Two Tubes and CP signals R. Max at one time. FL reports plenty of Dx after midnight at Albany. By the way, I would like to state here, that some of the Eastern Staters who are trying fone on 40 on Sundays with rotten RAC and ripply carriers should take a pull as your carriers take up about a third of the band in VK6, with no sign of decent speech on them, also those S.E. birds with jigsaw notes would do well to stop blooping all over the band. Don't know how your brother hams hear anything at all.

NORTHERN VK7 NOTES

By VK7LZ.

Since there seems to be very little known of the activities of the Northern VK7 hams, we propose, at the invitation of our Secretary, to furnish the gang with a few details each month.

First we mention 7BQ, the only active "old timer" up North; BQ has been making improvements to his 200 mx. gear, and his fone is of fb quality.

7JW reports having rebuilt his s.w. transmitter, using link coupling, and is experimenting with directional aerials; would like to hear some of the VIH gang on 80 mx.

7RC has been heard putting out fb fone of late.

7CP is temporarily inactive, but expects to resume operations and Reserve work shortly.

7LZ has erected a 60-ft. stick; is looking for DX on 40 mx.; is also doing Reserve work on 80 mx.

No reports to hand of 7CK, or the others of the Coast gang, but hope to have something to report next month from them.

TASMANIA VK7 NOTES

The September meeting of this division of W.I.A. was conducted in the club-rooms, 97 Collins Street, on the night of Tuesday, the 4th inst.

General business was handled, and five new members put through their enrolment, and two others passed for Council's approval, making seven for the month—very fb.

There were not many of the old familiar faces to be seen this month(?). We hope the bug still lives, lads, and will bight hard enough to bring you to "scratch" next month!

A lecture on "Audio Amplifiers," touching resistance v. transformer coupling, the advantages of triode over penthode, and theory and calculations of values for quality reproduction, was given by VK7BJ, one of VIH's latest aspirants to the ham fraternity, and was much appreciated. A hearty vote of thanks was handed the lecturer.

These lectures and talks are looked forward to each month, and other members are invited to brush up on their favorite subject, and let us hear about it. "Whose turn next? and don't all speak at once!"

Among the new members we have our youngest in Laurie Bailey, only twelve years old, and an enthusiastic youngster, too. Stick to it, Laurie, and see if you can be the youngest Tasmanian to get the A.O.C.P.

Our technical adviser—7RB—is at present in VIM on a business trip; or is it pleasure, Rhudolph? Anyway, good luck, o.m., even if we do chance to lose another VK7. We missed your cheery countenance at the meeting, by the way, 7WI, and the "Cent" o.m. How about it?

7BJ has forsaken the old TNT for a xtal rig, and is certainly getting a fb sig. Seems an improvement on old rig. 7KV, our latest member, welcome o.m.; manages to work a few Yanks between times.

7JB's xtal still perks with its usual ringing note, and he also lands a W or two to keep his fist in. He has just finished a new rig for the "Cent" contest.

About that 90-footer, J.B.—not a dream, surely! 7JH has just put the final touches to a three-stage rig, using 59 tritet C.O. 46 buffer-doubler with PP210s in P. amp. He is now waiting on a xtal to do the preliminaries.

7NC seems to have taken a vacation from ham radio; better perk up that tritet and bug again, Neville, and stage a comeback for the contest.

Have not heard 7AR yet; what's the hold-up, Carl; voltage regulation or has the wrist gone stiff?

7PA has not got the Election cpld. version of the 59 rig to perk up to expectation yet, but still has hopes, hi!

The Tuesday night gatherings each week have been pretty satisfactory for a start; so much so, in fact, that a code practice and elementary radio class has started for all who desire to make use of it. So here's your chance, chaps, if you want to improve for the A.O.C.P. Never too soon to start, and it is free for the taking, so roll up to the rooms any Tuesday night, and bring your 'phones just in case there are none to spare.

In a resolution passed at the monthly meeting, it was resolved that field days be left until after the Centenary contest owing to the preparations, one way and another, occupying the spare time of most of us.

Association of Radio Amateurs

[N.S.W.]

ZO—2HZ.

The amateur exhibit at the Men's Hobbies' Exhibition in aid of the Blind Industrial Institute, went off fairly successfully, although a lot more gear was expected for showing, and, taking the wireless portion all round, it compared well with many of the other sections, and created quite a large amount of interest amongst the visitors.

During the week-end, November 9, 10 and 11, it has been decided by the A.R.A. to hold a hamfest in the shape of a camp. The selected location is at Mona Vale, some 15 odd miles north of Sydney along the coast. The A.R.A. is desirous of having as many country hams as possible down for its week-end, in order to make a really representative hamfest for N.S.W. Already some country chaps have promised to come along, and they will be assured of a good time. Bring along your wireless gear and a blanket, a pair of shorts, and a shirt, swimming costume and a couple of bottles, and if you do not have a good time, well, it will be your own fault. Keep November 9, 10 and 11 clear and roll along in good style. For final arrangements and booking, please get in touch with R. H. W. Power, Wembly House, 841 George Street, Sydney, Secretary of the A.R.A., 'phone MA 2377; or VK2HZ, W. Moore, Esq., 348 Miller Street, North Sydney, 'phone X 1471. The cost will he under 10/- for the week-end, exclusive of fares, which should cost about 3/- return from Sydney. Everyone interested in Ham Radio is invited.

The monthly meeting of Association of Radio Amateurs was held at the Y.M.C.A. on September 20. Some 40 members were present, and VP1AM, 2FV and 2KR were elected as new members. 2KB, that well-known ham from Newcastle, was also present, and welcomed. Alan is at the moment located in Sydney, looking after the interests of his "B" Class station. Quite a little time was spent in discussing the idea of the aforementioned Hamfest and other alternate suggestions. After the general business was concluded, VK2HZ spoke on "Directional Effects of the General Run of Ham Antennas." The lecture for next meeting is left in the capable hands of Jack Pinell, VK2ZR; the subject is at present not selected.

The A.R.A. express their deepest sympathy to Zone Officer 2FI in his recent sad bereavement and loss of his father.

ZO—2YC.

After almost daily activity in August, the beginning of September finds almost dead silence on the ten-metre hand over here. For some unknown reason the request for activity from VK3 on this band has had a bad effect on us. 2SA is moving his QRA; 2XY has just done likewise; 2TO is on a month's vacation; done likewise; 2T0 is on a month's vacation; 2ZI is working night shift and sleeping daytime; 2YC is QRL "shop," late home each night and working Sundays, while 2BX hasn't a start on yet. But we still have one lone representative, for 2LZ has returned to ten again after four years' absence, and has been on Sunday and 7-9 a.m. Mondays—phone and c.w. A couple more weeks or less will see us all on again, but for the moment "sleeping" best describes "Ten" in New South Wales, and if sleeping describes ten metres, DEAD is quite apt for five. Hi.

However, when this appears in print the VK2's will, no doubt, be back again on ten, and please remember we listen and transmit at the hours and half-hours. 10 p.m. is the popular time during the week.

WESTERN SUBURBS WHISPERINGS.

ZO—VK2MY.

2PK.—After much rambling about, has at last settled at Haberfield with a three-stage Xtal rig, using 47-46-59. Gets BCL reports from ZL for 1250 K.C. transmission. NB Joeys. Hi.

2FO.—Trying out some new ideas in 56 M.C. antennas. Do they work at all, Tom? Also trying out new MOPA 46 and 46, but the oscillator seems to wander on its own.

2DW.—Finds that putting a new rectifier in the power supply makes quite a difference. Working his share of DX.

2PT.—The possessor of a FB shack that would make many a Yank squirm with envy; works more than his share of DX.

2NP.—Another convert to the Phone Fiends, uses single choke Heising on a MOPA wid 46 as PA.

QRA?—The Pirate gang are sure becoming a pest around this district. The latest stunt is to borrow an Interstate call. Heard one calling CQ the other night with clicks about twice as loud as a rotten rac qri, and signing a well-known VK5's call-sign.

2NH.—Bursting with ideas for a new rig, but, alas, too QRL with a R-9 YL.

2GR.—Has sure been having a bad spin. First his junior Op's very sick, and now Alec has to go under an operation. We all hope that everything will be OK, Alec.

2WZ.—Not heard on very often. Has probably one of the most famous Rx's in the ham game. Believe it was used for receiving the first W sigs. Sez it still does its stuff.

2OV.—Ex VK4FC, getting out solid with a MOPA 46 Osc. es 2 46 in parallel: The Pa appears to persist in wandering away from his Osc., however. Chain it up, OB.

2MY.—New rig appears to be perking alright at last, but having some trouble still with grid heating in the PA.

?—The best two stories go to the Phone Gang this month. Heard one of our gang pass the following remarks on to a staggered ham who he was QSO with, "Sorry OM. Afraid I didn't listen to that over was talking here if you care to repeat it," etc. Hi, hi. The other came to light in the early hours of the morning. A VQ4 to a VU2: "Yes, OM, ur phone QSA 3 R2 QSB bad and QRM very bad here from mains supply, but *you come through nicely.*" Hi, hi.

VK2CT.—Heard calling CQ with a ripply DC note, but it sure sounded more like CX here—22/8/'34. OM.

2OO.—Heard on with some nice phone, but appears to have a pretty hefty feedback in the mike.

2FD.—Had misfortune to do in one of his power supplies. Now installing a bridge rectifier with 83's.

Visitors VK5FB and 5PK will shortly be on their way to VK2, per caravan, per Mildura, Wagga, Canberra to Sydney, and thence to Newcastle. The Newcastle Gang have promised to take care of them up there, so we can be assured they will enjoy their stay.

Ryde.—Still no notes of the doings of the Ryde Gang. Would appreciate any sent along to me, please MY.

GETTING STARTED ON TEN METRES.

By Jim (2YC).

VK3JJ has asked me for a couple of points

about the above. I'm not quite sure if he wants to know "how to do it" or "how it is usually done." Uncle James will give all his readers (if any) a couple of remarks about the latter.

The last chap I heard "getting started on ten metres," and he's one of many, did it like this. He had an R8 plus sig of varying tones and he sent dit dit dit dah dits, dit dit dit dahs, some tantalising dah dit dahs, and all the various varieties of testing calls for just three-quarters of an hour, and then closed with never even a piece of his call. 2YC, who had been listening and waiting all this time, said "Oh deary me" several times, had a long QSO with him and sent him several suitably inscribed QSL's. As our American cousins say—Oh yeah!

Running the above species of "starter" on ten metres very close is the chap who, with several of his friends, listens on his receiver and wonders why he doesn't hear some QRM. Just imagine the QSO's on 7 M.C. if everybody "just listened."

NORTH SHORE ZONE.

ZO—2DR.

2AE at Wahroonga has been experimenting with aerials and has decided on a doublet for transmitting during the Centenary Contest. Dave has decided to abandon the superhet rx idea, and is building a TRF job. 2HY is having trouble with BCLs. Just heard that 2LZ's young brother climbed to the top of 2HZ's 60 ft. two by two mast!! What a man! You could make a wonderful cat burglar out of him, Con. (hi). 2VG has been elected on to the Committee of the A.R.A. Congrats., Rex, OM. 2VQ has bought out 2TB, so Jim should feature largely in the impending contest.

2XC has obliged with the following Mosman notes:—

Condx on 40 mx have been patchy and the seasonal change in DX condx is becoming apparent. Europeans are coming through fairly well in the early morning between 5 and 7 a.m.—also a few East Coast Ws. VK3EG seems to be very successful with this early a.m. Dx, and reports hearing W1, W2, W3, and W9 up to 10 a.m. one Sunday morning (hi). However, his location is ideal for both receiving and transmitting. Europeans also break through on 40 in the afternoons, but are not very strong now, and are usually blotted out by the Yanks, who start coming in about 4 p.m. A noticeable thing with the W's is the number who are using about 1K.W.—W6GRL, W6QD, W6CD. W6ARA. W6EXQ are just a few, but I give the palm to W9PZ, who, when I QSO'd him was using 2 k.w.!! He has 7 transmitters, and his QSL card is a little booklet! He asks VK's to look out for his 3.5 m.c. fone using 1 k.w. W6GRL reports condx for VKs and ZLs have been poor for August, but are improving.

The afternoon DX on 20 mx has faded out, only a few weak W fones being heard about 1 p.m. to 3 p.m. However 2LZ manages to QSO any that can be heard. However, European DX is starting to break through on 14 mc. at night now, and quite a few locals are migrating down there. 2HY and 2XU are the most successful so far. As to the local gang; 2FM is still about the most active, although 2XC was on fairly often during the Uni. vac. Alex (2FM) has added a p.p. 210's stage driven by a 210 buffer. His input is questionable and he certainly gets out with it—especially over to my QRA (hi). Alex is grinding a new xtal for about 7000 k.c., as he wants to QSY to 14 mc. 2XC is also thinking of joining him on 14 mc, as the 7 mc QRM is getting rather impossible. We both suffer from some lad continually tuning his xmitter from one end of the band to the other, and sending thousands of V's (hi). 2HI has been off with BCL QRM, very hard luck on Fred, as he was putting out a nice sig. on 40. 2RV gets on occasionally, but there is much room for improvement in his sig. which comes from a p.p. T.P.T.G. using 210s. He was heard on loop fone but the QRI is too rough for decent fone. Old 2UG has surprised us by being on quite frequently now. He still puts out his high class fone and occasionally uses a S.E. rig for CW. 2XG heard on rare occasions, but expect he will be on 20 mx. more often when the DX is coming through. I hear that 2NE has got his ticket back and is on again. That's FB Max OM. 2TB has given up ham radio for good in favour of canoeing. He has sold everything so won't stage a comeback! Jim of 2VQ has brought his rig, which is a 4 stage xtal with a 50 watter in the final. Jim is rebuilding and will be on again with xtal and QRO and what-o for the DX! 2HZ has a new receiver, yes *again!* using only 2 tubes, 77 and 37, but it is certainly the goods this time. He has been trying out 10 mx. Perhaps he is after the 10 metre DX contest! Look out Jim (2YC). Bill's a formidable opponent on your 10 mx territory!

2HZ is building quite a reputation for arranging (or disarranging) A.R.A. field days. His last effort was wonderful, and much appreciated by one or two that "we know of." So long—7.3. —DON (2DR).

ZONE 5A.R.A.

ZO—2BP.

Zone 5 notes are very brief this month, as I have been too busy to "get on the air" much. Brief observations show that conditions appear to be a little more settled on all bands but 20 m. With the decided change in weather conditions, the usual number of strong American fone and CW stations heard during the afternoons have become almost inaudible. DX on 40 m. is still rather scarce, but a number of Europeans and Americans have been heard during the last few mornings, though no attempt has been made to QSO. Eighty m. this year has not shown any great consistency as it did during the winter of 1933. Some nights have brought outstanding results, whilst others have brought forth much gnashing of teeth. No doubt these variable conditions have been caused to an extent by prevalent weather.

2NS has now some very fb gear—freq. m., 100 kc. oscillator have a proud place in the shack; both are as accurate as the most critical mind could wish for. Trevor is also working on a new transmitter which will soon be putting a healthy T9 sig. into various parts of the globe. Our old friend 2RJ's fone station gets bigger and better and now appears to be taking on the shape of a "B" Class outfit. Judging by the strength of the sig., 2RJ makes very good use of his "limited" power. 2MX at Dubbo has been consistently on 230 mx. and has built up quite a circle of ZL BCL's. His sigs. are invariably two or three points louder here than any of the more local ones, and there are only 12 watts tickling the plate of his final. 2BP has been QRL talkie work, and 'tis said that Eric spends some of his time at a certain YL's "shack," and him a member of the "woman haters'" club!

ZONE 6 NOTES.

At last we have some news of the Dubbo gang. There are two Hams there, 2BM and 2MX, and until recently they used to work exclusively on the B.C. band. Eventually 2EM succeeded in getting his rig going on 80 metres. 2MX is still trying to get a receiver going on the short waves. Also news of a new Ham in Wagga. 2BW is using 47 C.O. 59. suppressor grid modulated driving a pair of 46 tubes Class B. The ant. is temporary, but hopes to have a better one soon. 2LM is still using a pair of 59's suppressor grid modulated, and swears by them. 2QA also using 59's suppressor grid modulated and swears at them. As usual 2NM has been rebuilding, contemplates more changes soon. 2WH is using a tri-tet 24A. Thinks it's the berries. 2RS heard on every Sunday working the ZL gang. 2NS is back after a hectic time broadcasting politicians blah, via the public address amplifiers.

In conclusion, I would like to take exception to a lot of statements by VK4US regarding antennas. In the first place, he says the ham usually erects an antenna and leaves it, being too lazy to work out another system. That may apply in VK4 where (we are led to believe) the climate is rather trying, but it certainly does not apply to VK2 or VK3, where the majority of the hams are always trying out new radiation systems, and, despite all the new systems which look so well in theory, the old Zepp which 4US so sweepingly condemns still seems to be favorite. All types, including single-wire matched impedence, double-wire ditto, current fed hertz, Marconi, single-wire hertz without feeders, half-wave and full-wave doublets. Also tried out a system half a mile long and 35 feet high here at 2QA. They all left us, unimpressed, and at the present moment we are using the much despised (vide 4US) half-wave hertz with Zepp feeders. To quote another case, 2LM went to a lot of trouble to erect a "theoretically" perfect doublet. Using it in conjunction with a switching arrangement from his old Zepp so as to be able to select either antenna at will, he gave the better percentage of reports in favor of the Zepp. So I think it will take more than a few figures on paper to persuade the majority of hams to depart from the old Zepp, which has undoubtedly proven itself. (There should be some technical copy here, o.m.'s—Ed.)

ZONE 7 NOTES.

ZO—2FI.

General conditions in this part of the State show an improvement to what we have been experiencing lately. On 80 metres several Yanks have been heard at very good strength. DX on 40 mx also seems to be looking up. 2YW has been heard on 80 mx fone with a YL on the mike.

2GY has been holidaying at Austinmer for the past few weeks. 2SF, the local ham, didn't know he was there until he was put wise over the air. 2TM heard occasionally on 80 mx. 2XF is active again, mostly on Reserve skeds. 2FI, QRL and not on much.

Would appreciate more dope on your doings, boys, so shoot it along.

ZONE 8 NOTES.

ZO—VK2OJ.

3EG, with a few energetic BCL's from the valley, tried to erect a 70 ft. mast, but when erect discovered that only 55 ft. of 2 x 2 remained skywards. Hi. However, providing no severe wind storms go that way, he is confident that it will stand the strain until after the contest. Hi.

Jim 2NY was with us for the week-end, and 2YI demonstrated to him just how to add those few extra dots when bug pounding. O, yeah! Jim will, no doubt, become a member of NZART soon; anyway, Harry thinks so. 2YI applied 500 v. to his 46, then closed his eyes until it recovered from the shock, but appears to like it, and R8 reports are there. Note is a bit T6 at present.

Forty mx has shown a decided improvement during the past week here, but 80 mx a bit troubled with QRN. Nothing of note heard on 20 metres so far.

2QE has improved his note and chirp is now absent fb. Mostly QRL (vy) at 20J. A 210 in the p.a. is handling 100 watts or so without a blush, and looks like standing it for some time. 2YI is always glad to enrol new members for the NZART.

Victorian QSL Bureau.

R. E. Jones (VK3RJ), QSL Manager.

Cards are on hand at the above Bureau, 23 Landale Street, Box Hill, Victoria, for the undermentioned stations. A stamped envelope will ensure the prompt despatch of these cards. VK3AT, AY, BF, CL, CW, DQ, ES, ET, FC, FM, GC, GY, GU, HT, IT, JE, JG, JK, JN, JL, JR, JX, JZ, KO, KQ, LG, LP, LT, NG, NR, NW, OP, OY, OZ, PW, PZ, QZ, RQ, RW, TD, WC, WD, WQ, WX, XK, XL, XP, YR, ZC, ZK, ZO, ZX. Numbers of the above cards will be returned to the senders if not claimed during October.

VK3GE finds conditions in Queenscliff a little different to Hobart.

Writer would be glad of any information likely to help him tracking down the pirate using VK3RJ on the Broadcast Band. VK3RJ has never been on that band yet, nor does he contemplate using this band. ZL broadcast listeners please note.

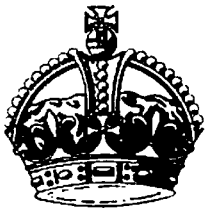
VK2's on 28 M.C. are 2BX, 2SA, 2ZI, 2LZ, 2HZ. Most of these stations call on the hour or half-hour and are frequently on around 10 p.m. to 10.30 p.m. and at 7.30 a.m. any day.

VK3OF and 3JJ report hearing 3HK and 3RJ on 28 M.C. during the morning of September 9th. Neither 3HK nor 3RJ could hear 3OF or 3JJ on September 16th.

VP1ZZ is our old friend John D. Olle, late VK2OZ, and his present QRA is Radio Station Labasa, via Viti Levu. VK3YR claims the first VK3 contact.

Can anyone supply the QRA of VS8AJ? This QRA urgently required.

R.A.A.F. Wireless Reserve Notes



VMB

Total No. of Messages 292

Average per Station 41.71

VMB2

Total No. of Messages 169

Average per Station 42.35

2A2

Total No. of Messages 116

Federal Notes by the C.O.

During the month activities at H.Q. were temporarily suspended on account of reconstruction schemes at 1A1. However, this only applied to practical Federal operations and the usual "office" work went on.

Several items for the betterment of the Reserve are being considered at the present moment, including the organisation of a chain of stations throughout the Commonwealth for nightly contact, in such a manner that all Districts will be interconnected at least once every 24 hours. The publication of Part II. of the Signal Training Manual is well under way and should be dispatched shortly. This will complete the provisional manual and the new additional procedure will add to the interest created by Part I. to date. Then again, steps are being taken to hold qualifying examinations for the grade of "instructor" in the Reserve procedure. As many members have been in the Reserve for some time now, it is only right that we should find out the exact standard of each man, so that, with the advent of new members, the District Commanders will be greatly aided by having fully qualified instructors to educate the recruits. At present the D.C.'s are overloaded with District organisation work and have little time for recruit training. The examination proposed is a simple one and will be done at leisure with the aid of the training manual.

A list of special Reserve frequency allocations has been supplied by the Air Board. These include some handy frequencies outside the amateur spectrum, but mainly provide for the 75-80 metre band which, as we all know, is a shared band. With these definite frequency allotments, each Section will be assigned a working frequency, instead of being spread over a band, as in now the case. It is claimed that better and quicker working will result by this change and will eliminate long calling and searching.

A recent bulletin to D.C.'s from H.Q. dealt with the name that the Reserve has made for itself in various countries of the world. Receiving letters from overseas that offer us congratulations and a "pat on the back" are very gratifying. They only go to show that the services of the amateur as Service operators, throughout the world, are being sought after more and more. Having established a lead on all other officially organised units, we have something to live up to and be proud of. The following letter speaks for itself and demonstrates how the good work and good fellowship in the Reserve has helped to put our show before the eyes of the world, so to speak.

4334 Westmount Avenue,
Westmount, P.Q.,
August 1st, 1934.

Pilot Officer R. H. Cunningham,
O.C., Royal Australian Air Force, W.R.,
1 Dalny Street, Malvern, S.E.4,
Victoria, Australia.

Dear Mr. Cunningham,—

I was fortunate in meeting G5TI, Bob Applin, operator of the s.s. Pencarrow, who was telling me of the very fine linking existing between the Australian amateurs and the Air Force. Inasmuch as myself and a few other amateurs have been trying to get our Government to co-operate with us in forming a network similar to that existing in your country and in England, I thought I could impose on your being an amateur and also prominently linked up with similar services, to get, if possible, some backing to our scheme.

Lieut.-Commander R. H. Mainguy, the Naval Intelligence Officer at Ottawa, is very keen on our forming the Wireless Reserve and linking up with the Navy, so are many other officers who have had the privilege of seeing the Royal Naval Wireless Auxiliary Reserve at work in England. I thought that if you, as O.C. of the R.A.A.F.W.R., could briefly cover the services that the amateurs have rendered to your unit, we might be able to push forward the negotiations now pending at Ottawa, and possibly hasten the formation of our Naval Wireless Reserve. The plans for this reserve are similar to those used in the formation of the corresponding unit in England.

If it would not be asking too much, I would greatly appreciate your reactions to this letter and anything you can do to assist us in proving to our Government the public-minded spirit of the amateurs will be greatly appreciated by all the amateurs in Canada.

Anticipating the pleasure of hearing from you, and with my 73, I am,

Yours very truly,
VE2AP. JOHN C. STADLER.

SECOND DISTRICT NOTES.

By 2ZI.

The last month has shown a very decided fall in message handling in VMB. It is also noticed that two of the highest scorers in last month's returns have not submitted a report this time. I refer to 2A1, who last month originated 181 messages, and 2A4, who also swelled the totals by adding 83 messages.

The grand total of messages last month amounted to well over a thousand, whilst this month only 292 messages were originated, and the average has dropped from 114 to a little over 41. Perhaps this state has been caused by the relay contest which was held during the last week in September. Members may have been saving their energy for that. However, VMB cannot always top the traffic score, and our last month's average per station of 114 is going to be very hard to beat.

One of the most enthusiastic members in VMB is 2B5, and it is with pleasure that I announce he is shortly to be known as 2Z3, and when he has "learned the ropes," it is hoped that he will accept the position of D.C. for VMB.

A new member who is showing promise is VK2YI, who was assigned the call of 2A3 on the resignation of VK2KB.

The two months' deferment of training to certain members will expire shortly, and they will then be expected to commence training or show good reason if further deferment is desired.

On Sunday, September 5, another test broadcast, similar to the one transmitted by 2Z1 the previous month, was sent by 2A2 to section VMB1. The message contained ten procedure and spelling errors, and the following reports were submitted by members of "A" section:—

2A4 detected all errors.

2A5 detected eight errors.

2A6 did not compete through bad interference.

TRAFFIC.

2A2, 116; 2A3, 1; 2A5, 24; 2A6, 28. Total, 169; average, 42.25.

2B2, 43; 2B8, 39; 2B5, 41. Total, 123; average, 40.75.

District average, 41.71.

THIRD DISTRICT NOTES.

By 3Z1.

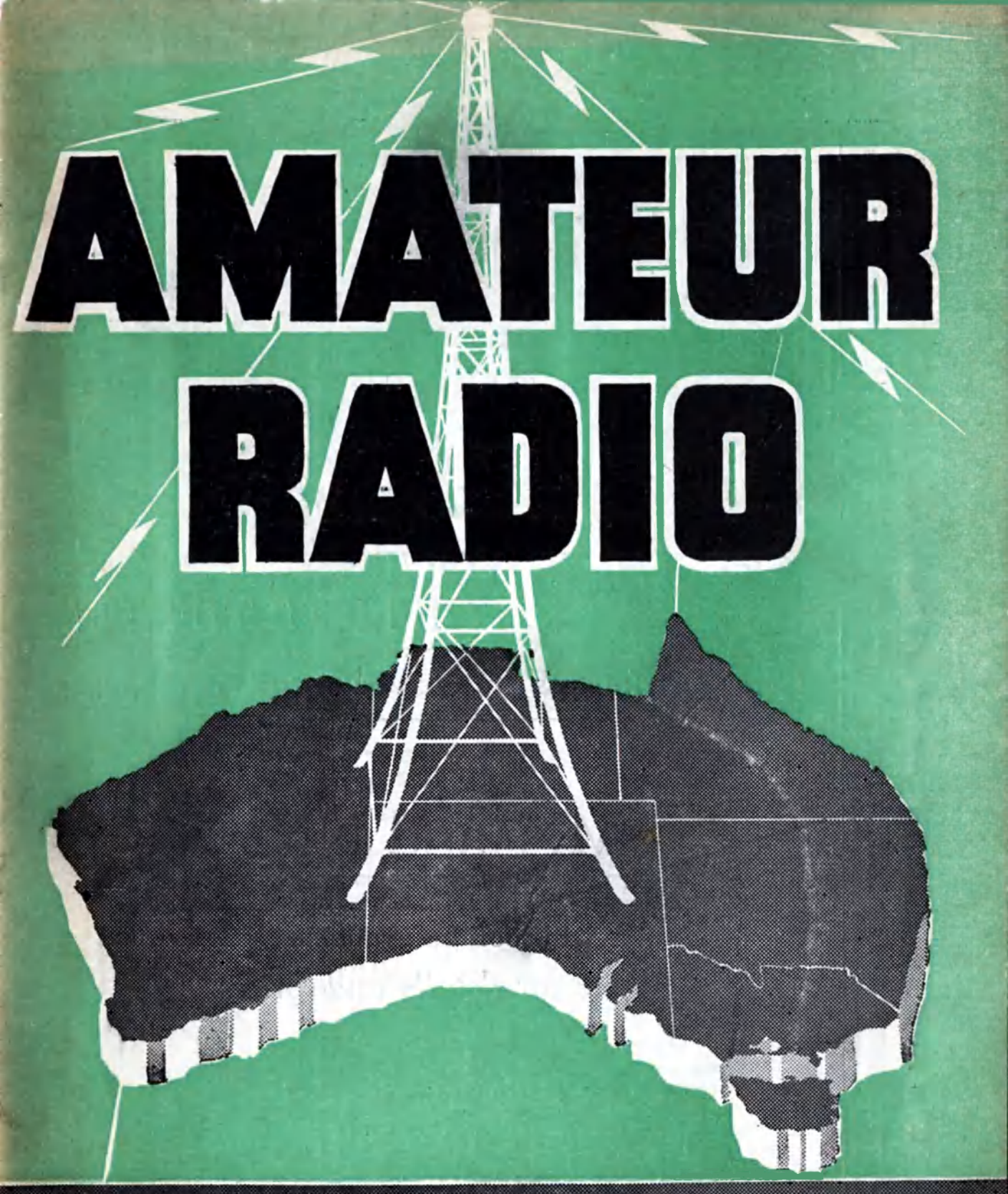
This time next month all VMC stations will be in the thick of preparations for the Reserve Centenary Convention. 3Z1 and 3Z2 will be checking over the final details, whilst all country stations will be packing up for the trip to Melbourne. What a month October will be! Centenary DX Contest, W.I.A. Convention, and the Reserve Convention! Because of the Centenary Celebrations that will be on during the Convention period, it has been thought advisable to forego any ideas of a camp for training at Laverton until 1935. Country stations will want to be in the thick of the fun in Melbourne, instead of being 20 miles away, even admitting the interesting and instructive nature of a camp such as that proposed.

As the W.I.A. Convention runs from October 29 to November 3, our R.A.A.F.W.R. Convention will not really commence until November 4, although all stations will be down by October 28. During the Convention the Traffic Contest Trophy is to be presented. This will be included on our programme of activities. The actual dates of these will be given in a special broadcast from 3Z1 on October 21, when all operators are asked to forward information as to the date of their arrival and their Melbourne address. All ordinary schedules will be suspended during October, because of the Centenary Contest, the above special schedule being the only one during the month.

Owing to 3Z1's illness, the metropolitan meeting has been cancelled, and the matter arranged for discussion will be held over until one of the Convention meetings, when a much more representative expression of opinion will be obtained. The matters for discussion this year are far more important and far-reaching in their possible results than any we have had during the six years VMC has been in existence.

Elsum Printing Coy., 124-126 Whitehorse Road, Box Hill.

AMATEUR RADIO



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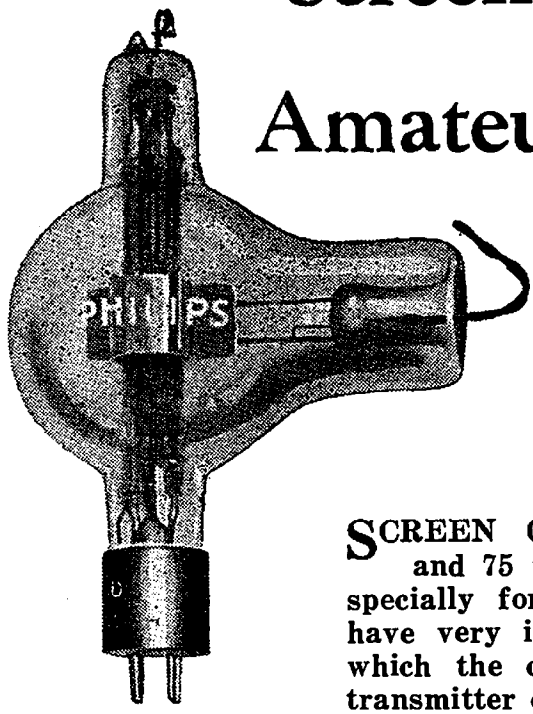
Screen Grid Valves
For
Amateur Transmitters



quarter of actual size

Types:
QB2/75, QC05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A. Type.	Screen Grid Valves QC 05/15.	QB 2/75
Filament Voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam. of bulb	50	100
Max length	160	210

*Approximate values.

PHILIPS
TRANSMITTING VALVES

Editorial

Celebrations! What a world of fun, enjoyment, and pleasure revolves around those 12 letters. With Melbourne gay with bunting and decorations of various descriptions; with Melbourne the Mecca of tourists, both Interstate and overseas, we can say that everyone in the garden city of the South is 100 per cent. "Celebrations conscious." Yet, while the community, as a whole, is feting Melbourne's Centenary; while the festive spirit is abroad, it seems most appropriate that we, the Ham fraternity, should have a celebration of our own that intimately concerns us all. With this issue we celebrate the first birthday of "Amateur Radio." From an embryonic thought in the minds of a few idealists, from the universal demand of the Hams of Australia, our lusty youngster of one year has sprung. Now, after 12 short months, "Amateur Radio" is accepted as an essential part of our Ham lives. Up to the present, the Editors have only had printed technical articles, containing the necessary practical data to bring all stations into line with the trend of Radio advancement. Whilst still continuing with this policy, we intend to offer new theories and new avenues of research, as they open up, with the idea of fostering a more intense experimental sense in us all. We must confess, somewhat shamefacedly, perhaps, that the amount of work we do, individually, along new lines of experiment is very small. Our experimental sense is not developing; it is stagnating, and, inasmuch as the job of the Press is to lead public opinion, surely the job of "Amateur Radio" is to lead and guide our Ham lives.

How many of us have experienced that never-to-be-forgotten thrill of experiment when we "sail an uncharted sea," and, perhaps, bring our experiment to a successful conclusion? Not very many of our newer Hams have ever attempted to follow in the footsteps of the old-timers, and seek knowledge in their hobby by actual experiment. Most are quite content to reproduce the product of another's energy and work. A tour around the average shacks will bring this fact home very forcibly. The average transmitter is either English or American in layout and design. We have yet to evolve, shall we say, an Australian personality in our shacks. To assist in achieving this ideal is one of the future aims of "Amateur Radio."

We each hold an EXPERIMENTAL Licence, and if each and every one of us remembered this fact, we venture to say that there would never be heard that expression, repeated only too frequently, "Ham Radio has not the same kick as it used to have." We have only ourselves to blame for that statement; we must administer "the kick" ourselves. It wouldn't be much use for us to sit in a car without an engine, expecting to get somewhere. We must have motive power to move, and what an engine is to a car, so experimental work is to the fullest enjoyment of our grand old hobby.

The same "kick" can also be spoken of in reference to "Amateur Radio." This is a job that concerns every Ham in Australia, both individually as well as collectively. Individually, because each must see that he does his part towards supplying notes and articles; collectively, because he must try and increase his State's circulation. If you feel that things are either not what they were, or not what they ought to be, before you raise a cry, ask yourself whether your own apathy is not a contributory cause to the trouble. Remember the whistle doesn't move the train. So get your shoulders to the wheel; your fellow Hams will help you; your W.I.A. and A.R.A. will help you; the P.M.G. Department will help you, and your own magazine, "Amateur Radio," will help you. So how about it?

Country Members' Representatives to Council (Vic. Div.): Mr. Howden (3BQ), Mr. Marsland (3NY). Send your requests along

Directional Antennae for Higher Frequencies

(By courtesy of Westinghouse Electric and Manufacturing Co., through Alan S. Duke Pty. Ltd.)

The possibilities of directional antennae systems have always been a source of dreams to the amateur. But when he views such systems as are employed by the large commercial radio companies, with their acres of required land, his dreams fade, and he reconciles himself to the old single wire which runs out over the back shed through the trees. The 56, 28 and 14 megacycle bands are fields in which the amateur may easily try out some of the simpler schemes and he may expect to obtain results which will repay his time and trouble. He might even find it possible to add a reflector or two to his 7 megacycle antenna.

The directive antennae systems used by the commercial companies are quite extensive—and also expensive. They consist of complicated arrays such as were developed by Chirex, Latour, Conrad, Franklin, Marconi, Alexanderson, Beverage and others. For the most part they consist of systems radiating a vertically polarized wave. They obtain their directive effects through the stacking of half-wave elements, the use of long arrays of the same, and the use of reflecting curtains. Such installations may extend for hundreds of feet and rise to great heights even though the frequency at which they operate be around 14 megacycles.

The amateur is limited to the simpler schemes such as the Double Zepp, the "H" Type, the Parabolic Reflector type, or if he is more ambitious he may construct an antenna employing four elements, with or without a reflector. He can easily add a reflector or two to his present vertical doublet which will improve its field in definite directions. It is possible to construct all these types in a limited space if they are employed on 28 or 56 megacycles. The Double Zepp is mentioned since it is really a part of the "H" type and in addition has the advantage of being operable at two frequencies with little difficulty.

Before going into the discussion of the types mentioned it is well to consider the fundamentals surrounding an antenna. Except in a few rare occasions, all antennae may be considered as half-wave elements. A half-wave element or doublet, as it is commonly called, if so located as not to be influenced by any surrounding objects, has a definite field, both with reference to its axis and in a plane perpendicular to its axis. In the plane perpendicular to its axis it radiates uniformly in all directions of the compass. In other words, a vertical doublet will radiate uniformly in all directions of the compass. In a plane through its axis, the field is strongest at points at right angles to the axis and weakest off the ends of the axis. In other words, an aeroplane flying one mile above a vertical doublet would receive a weaker signal than when flying one mile on any side of the doublet. When the doublet is brought down near the ground, that portion of the field radiated below the horizontal is partly absorbed and partly reflected by the earth, depending upon the effectiveness of the earth as a reflector. It is customary to consider only that portion of the field radiated above the horizontal. In the case of a grounded quarter-wave antenna this consideration is of course correct.

The introduction of any object near the doublet will cause the impedance of the doublet to be lowered. Such objects absorb part of the energy radiated. But if such an object is capable of reradiating the energy absorbed it will naturally cause a change in the field pattern. Such a change is commonly termed "interference," and the resulting field called

the "interference" pattern. If the interfering object be another doublet, it will absorb and reradiate the energy with little or no loss. Upon these facts are based the systems discussed. The added doublets may be fed directly from the transmitter as in the case of the "H" type and multi-element beam, or operate by absorbtion and reradiation as in the case of the parabolic type and the screen of the multi-element beam. In practice, the commercial companies feed all the elements of the array through transmission lines and are able to control the phase relation of the instantaneous currents and the values of the same.

It should be pointed out that all objects in the field of an antenna capable of absorbing energy affect the interference pattern. This accounts for many cases of marked directional effects of antennae when consideration of the antenna itself gives no indication of such effect. Interfering objects of this type can upset the best laid plans for directive antennae. Be sure to take all possible objects into consideration when laying out "signal squirters."

The Double Zepp Antenna.

The Double Zepp antenna may be used for two frequencies, one of which must be twice the other. It will be noted that the current distribution of this antenna when used on the lower designed frequency, is identical with that of the common doublet. Fig. 1 shows the current distribution in such an antenna designed for 20 and 10 metre work and being operated on 20 metres. The quarter wave transmission line acts as an impedance matching transformer when the input impedance equals the load of antenna impedance.

Fig. 2 shows the current distribution for the antenna when being operated at the higher frequency. The antenna now has assumed a simple form of the "stacked" type of array. This will cause the energy radiated to concentrate in a narrower beam at right angles to the axis of the antenna. There will be a current node at the transmitter for both frequencies.

Example: 21 and 10.5 Metres.

$$L = \frac{\text{Lower Wave length}}{2.1}$$

$$L = \frac{21}{2.1} = 10 \text{ metres} = 32.8 \text{ feet.}$$

If such an antenna is erected vertically and operated at its higher frequency it will have a gain between 2. and 3. d.b. over a straight doublet operating at the same frequency.

The formula given is of course empirical, but is the same used in calculating doublet dimensions It is obvious that this antenna operates differently than the conventional Zepp operated at a harmonic

The "H" Type Antenna.

This type of antenna has found much use by the British in high frequency directional receiving equipment. Here is an antenna system that possesses marked characteristics. It may be considered as two Double Zepps spaced ½-wave apart. If such a system were designed for 21 metres but operated at 10.5 metres, it then consists of two double Zepps spaced one wave apart. The elements operate in phase since tney are fed directly. When operating at 21 metres the system is bi-directional, the beams being at right angles to the line of array. When operated at 10.5 metres, it is directional in four ways, but the beam passing through the line of the array is spread out over a wider angle and not as strong as the beam at right angles to the line of array. Fig. 3 shows the general plan of such an antenna. Fig. 4 shows a polar plot of the field surrounding such an antenna when designed and operated at its lower frequency. Fig. 5 shows the polar plot of such an antenna when operating at twice its designed frequency.

In this antenna system use is made of the fact that a standing wave has a pure resistance component at both its maxima and minima. By constructing the sections of the feed lines that connect the radiating elements to the main feed line from the transmitter, each ¼-wave long, they may be made to function similarly to a transformer and be used to match the load impedance of the antenna to the main transmission line impedance.

Determination of the characteristics and dimensions of the connecting ¼-wave lines and the main feed line are the main considerations of such an array. The lengths of the radiators are determined by the same formula as used in the Double

$$\text{Zepp. L} = \frac{\text{Lower Wave Length.}}{2.1}$$

It is assumed that in either case it is desired to feed the centre of the line connecting the radiators with a 600-ohm line. This is the point indicated as "b" in Fig. 3. This means that the impedance of each ¼-wave line at the point "b" should be 1,200 ohms. When the two lines are joined, to be connected to the main feed line, they will offer an impedance of 600 ohms, to the feed line as results from the paralleling of two impedances. However, the antenna connected to the other end of each quarter-wave line will have a resistance somewhere between 60 and 90 ohms. 70 ohms seems to be an average resistance for antennae of this type when operating between 14 and 28 megacycles. By so constructing each ¼-wave line so that it has a certain characteristic impedance, a perfect match can be made of the 600-ohm line to each antenna. Determination of this characteristic impedance and the dimensions of the line are as follows:—

Let Zq equal impedance of quarter-wave line
Zf equal impedance of feed line
Zl equal load impedance of antenna, therefore Zq equals the square root of ZlZf or for values given above
Zq equals the square root of 70 times 600
equals 205 ohms.

Since a transmission line constructed to have the above characteristic impedance will be rather closely spaced, it is usually best to consider the materials at hand and calculate the spacing. This is done by using the well-known formula

$$Zo \text{ equals } 276 \log_{10} \frac{2D}{d}$$

where D is the spacing and d is the diameter of the wire.

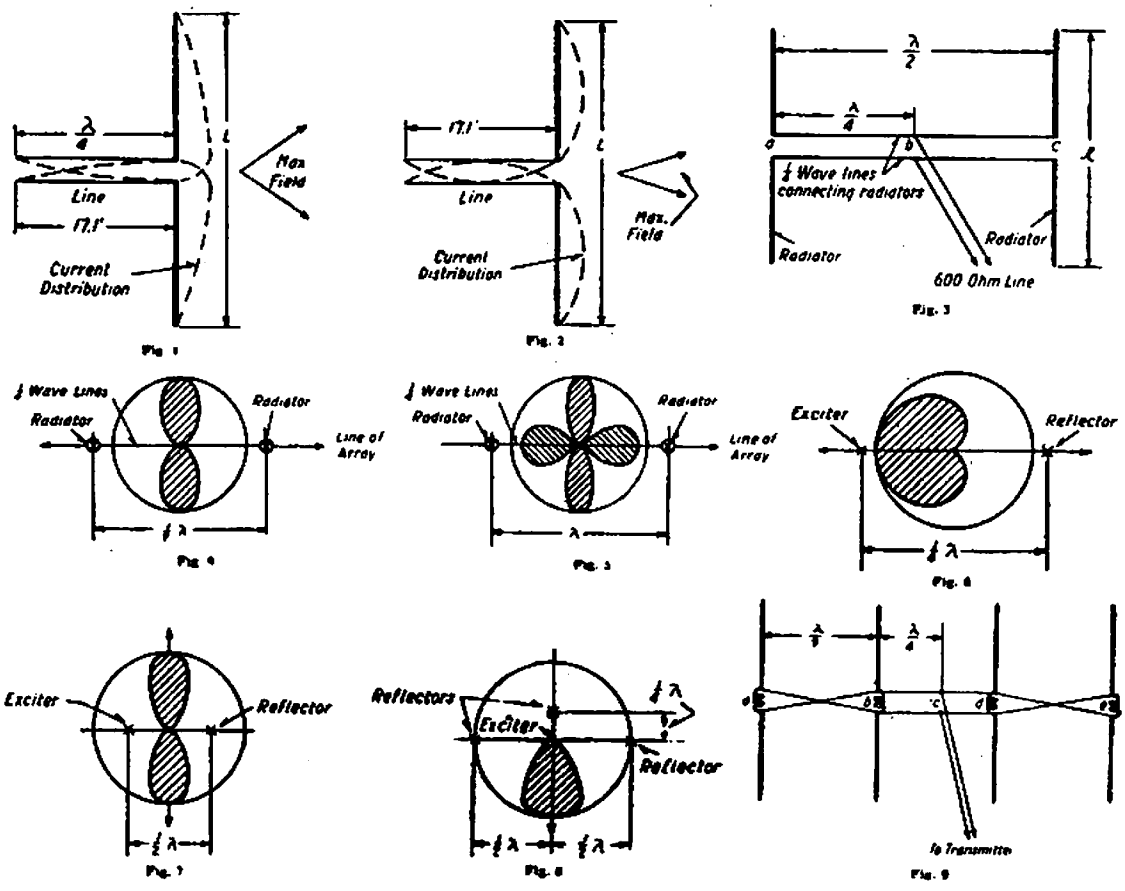
¼-inch tubing spaced 2 inches apart would be satisfactory, or No. 18 wire spaced about ⅛ inch would be satisfactory. The latter calculation indicates that a pair of twisted and insulated wires, such as lamp cord or telephone twist, might prove satisfactory. It is recommended that a small conductor, about No. 14, be used, and spaced on small insulators.

When this system is used at the higher frequency, the determination of the connecting ¼-wave lines is of no importance, since the load impedance of the antenna is then reflected at the centre and the impedance at point "b" becomes say 70 ohms for each line. The effective impedance presented to the feed line is now 35 ohms, and construction of such a line is impracticable unless one goes to a line using 4, 6, 8 or even 16 wires. There is an easy solution at hand. Since the impedance matching transformer effect of a line is not limited to ¼ waves but may be applied to any line that is an odd number of quarter waves long, the amateur has but to place the antenna-system at such distance that the 600-ohm feed line is some odd multiple of a quarter wave at the **higher** frequency used. This can be done more readily if such a system is used on 20-10 metres or 10-5 metres. The impedance at the sending end of the 600-ohm line can be adjusted on the tank coil of the transmitter. If the above conditions existed, the input of the 600-ohm line when used as an impedance matching transformer, would be $600 = \sqrt{35\,Zf}$ or $Zf = 103$ ohms. This should present little difficulty in matching since the amateur probably will change coils when using the higher frequency.

Closely spaced ¼-wave lines may be avoided by constructing the feed line so as to have a higher impedance, say about 1,000 or 1,200 ohms. This will also improve the coupling at the transmitter when the antenna is used on the higher frequency .

Effects of Adding Reflectors. Parabolic Beam Antenna.

The "H" type antenna is an example of several elements being positively excited. However, should a doublet be placed near an existing vertical doublet, it will absorb energy and reradiate the same, the phase relation of the currents in the two elements being dependant upon the spacing of the elements. Two



doublets separated ¼-wave with a phase difference of 90 deg. have the peculiarity of radiating strongly in one direction along the axis of the array, with zero amplitude in the opposite direction. Two doublets spaced ½-wave apart with a phase difference of 0 deg., radiate strongest in both directions perpendicular to the axis of the array. It is apparent that if a reflector doublet were added ¼-wave behind an existing antenna, and two more erected each ¼-wave to either side of the existing antenna, the array would assume the shape of a parabola with the existing antenna at the focal point. The results obtained from such a Parabolic Beam Antenna will often cause a signal increase of 5 to 7 d.b. in direction of the transmitted beam. Figs. 6, 7 and 8 show the development of such a system. In erecting a parabolic system, the exciter doublet is brought into proper adjustment first, then usually the rear reflector second, and then the side reflectors one at a time. The exciter may then be retuned. As each reflector is added, there will be an increase in the currents of the antenna and existing reflectors. This is due to the lowering of the resistance or load impedance of the antenna. The amateur may improve his signals by adding a single reflector spaced ¼-wave to the rear of the antenna in the desired direction, or ½-wave to the side of the antenna at right angles to the desired direction. The average back yard will allow erection of a reflector. Tuning the rain spout may improve your signals.

Four Element Beam. With or Without Reflectors.

The "H" type antenna may be further developed by the addition of a driven element ½-wave to either side of the existing elements. It then takes the form of an array consisting of four ½-wave elements spaced ½-wave apart in a plane at right angles to the desired direction. It is recommended that the elements each be coupled to the connecting feed lines with coil terminations. Fig 9 shows such an array. In order to keep the phase relations of the outside antennae the same as the inner antennae, it is necessary to reverse the connections of the connecting ½-wave lines. It is possible to keep adding elements at ½-wave intervals.

This has the effect of narrowing the beam in the desired directions. Antennae containing as high as 16 elements have been constructed.

The calculation of the required transmission lines may appear difficult, but upon inspection it proves quite simple. It is possible to construct the ½-wave, ¼-wave, and the main feed line to the transmitter so that each has the same characteristic impedance. The coil termination at an outer antenna designated as "a" is reflected to the inner antenna coil termination at "b." To the connecting ¼-wave line these impedances parallel and present half this impedance. This holds true for the other half of the antenna, that is at points "d" and "e." Since these impedances when transformed by the ¼-wave line should be twice the main feed line impedance, it is found that if all the lines are constructed to have the same characteristic impedance, the system is perfectly matched. The reasoning is as follows:—

Let Za be antenna termination impedance

Let Zf be the main feed line impedance.

Let Zo be the ¼-wave line impedance,

then at point "b" and point "d" the impedances will be $\frac{Za}{2}$

Therefore

$$Zo = \sqrt{\frac{Za2Zf}{}} = \sqrt{ZaZf}$$

if Za is equal to Zf then

$$Zo = \sqrt{Z2\text{-}f} = Zf$$

All the lines may be of 600-ohm impedance.

Such an array will have a gain of about 6.5 d.b. If reflectors are erected ¼-wave behind each antenna, the array is unidirectional and will have a gain about 10 d.b.

If this array is used at twice the designed frequency, the outer antenna impedances are again reflected to the inner terminations since the ½-wave lines are now full wave lines. The impedance halves and is now reflected by the ¼-wave lines which function as ½-wave lines, and the impedance presented to the main feed line is ¼ of the antenna terminating impedance. By constructing the main feed line to be an odd multiple of ¼-wave long, at the higher frequency, the existing feed line will still serve. The impedance this line presents at the transmitter tank coil is four times the antenna terminating impedance. This should not present much difficulty.

All the elements in the four-element antenna can be constructed by the methods given in the previous article, Two-Wire Untuned Transmission Lines.

WHERE IS 28 AND 56 M.C.?

There seems to be an impression among some hams that these bands are hard to find unless one has a wave meter, but if knowing where 14 M.C. is, there is really no more trouble finding 28 M.C. than there is in finding 14 M.C. from 7 M.C.

As almost everyone has a 14 M.C. oscillator, it is quite easy to "cut and try" the receiver coils until the second harmonic is found, which will appear on 28 M.C.

If a transmitter has been constructed, put up a wire 16 feet 6 inches long, and in the centre insert a small two-turn coupling coil, with a midget condenser on one side and a pea lamp on the other. Now tune the transmitter to put power into this, and with the 14 M.C. coil in the receiver an overtone will be found fairly close to or in that band. Finally adjust the transmitter till this overtone is between 14,000 and 15,000 K.C.

The same procedure can be used for 56 M.C.. the length of the "antenna" being 8 feet 3 inches.

Another method is to use the Letcher wire system, in which two parallel wires, about 40 feet long and three inches apart, are required. a loop at one end being coupled to the oscillator. A plate milliameter is needed to show resonance, which will occur at points a full wave apart when a short circuiting strip is slid along the wires.

By measuring these points the wave-length of the oscillator can be found (which will be between 16 and 17 feet) for the 56 M.C. band.

Incidentally, there are a couple of G.R. 56 M.C. wavemeters in the Vic. Division instrument library getting rusty for want of use!

The Neutralisation of Power Amplifiers

By Robert A. Anderson—VK3WY.

During the last few years COPA and self-excited MOPA rigs have become increasingly popular as their many advantages have been recognised. There is seldom any difficulty found in getting the oscillator to perk, but occasionally difficulties spring up after the power amplifier stage has been hooked on. A lot more goes to the successful operation of neutralised power amplifiers than is usually realised by a large percentage of budding hams—until they have tried them, anyway.

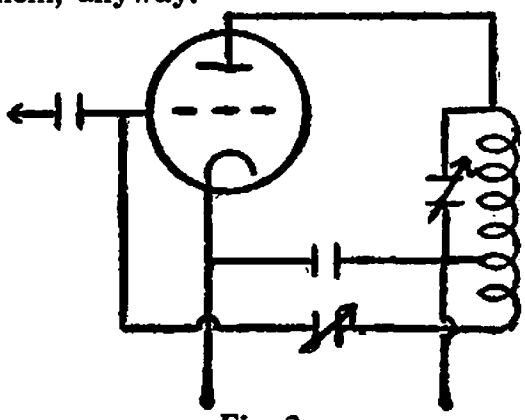


Fig. 2

One of the main snags is the neutralisation of the tube. It is often a hidden snag, as a common procedure of neutralisation which is not easily apparent, but which is detrimental to the efficiency of the tube and ruinous to the note. This effect on the note is particularly noticeable when a self-excited master oscillator is used.

Neutralisation of a power amplifier is necessary because the interelectrode capacity of the tube will feed back energy from the plate to the grid circuit, and, when both plate and grid circuits are tuned to the same frequency, will cause the tube to oscillate in the manner of a TPTG oscillator. In the case of a tube acting as a frequency multiplier, the grid and plate circuits are tuned to different frequencies, and so the tendency to oscillate disappears. In the case of a screened grid tube, of course, there is insufficient interelectrode capacity for the tube to oscillate and consequently there is no necessity for neutralisation.

Although, as stated above, neutralisation is unnecessary with frequency multipliers, it has been found that with judicious use of the neutralising condenser, greater output can be obtained from the tube. The capacity of the condenser should be adjusted so that the tube is just outside the point at which it will commence to oscillate. This adds regeneration at the harmonic frequency and considerably bumps the output of the tube.

All methods of neutralisation depend on impressing on the grid a potential equal to, and 180 degrees out of phase with the voltage fed back through the interelectrode capacity of the tube. The methods which have been in most general use during the last few years for obtaining this voltage are shown in figs. 2 and 3 These have been dealt with very fully in the past and so nothing further about them now.

In fig. 4 is shown one of the latest and, at the same time perhaps, the most efficient form of neutralisation. Instead of tapping the tank coil, as in the previous circuits, the tank condenser is tapped. A split stator type

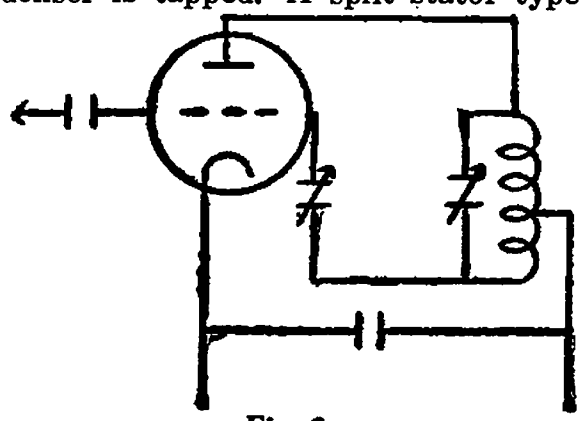


Fig. 3

condenser is used to make this feasible. As a constant voltage ratio is obtained between the two sections of the tank circuit, regardless of the coil used, the one setting of the neutralis-

ing condenser will be correct for all bands. Although this type of neutralisation was primarily evolved to obviate the necessity for reneutralisation on each band, it has been found to improve the general efficiency of the power amplifier to a large extent. This may be attributed to (a) the input capacity to the tube is diminished, and (b) it has a tendency to cut out the second harmonic. Actual results have shown an increase in antenna current of from 10 to 20 per cent., the input being kept constant. When using link coupling between the power amplifier and the exciting stage, it is possible to use larger grid coils because of the lower input capacity, and thus provide a higher exciting voltage to the grid of the amplifier. It will be found that neutralising condensers will need to be smaller than usual when using this method. This may cause some difficulty when using tubes with a low interelectrode capacity, e.g., types '47, 85, 800, etc., but the method will be found to be admirable for tubes with higher internal capacities.

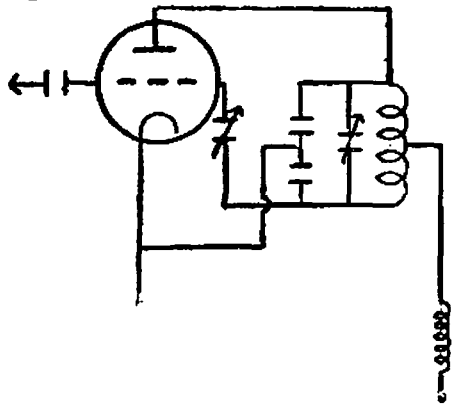


Fig. 4

For low or medium power amplifiers receiving type condensers will be satisfactory, as the breakdown voltage is doubled owing to the two sections of the condenser being in series. For higher power amplifiers, however, transmitting type split-stator condensers are necessary and these are often not easily obtainable. The same effect may be obtained, however, by placing two condensers in series with each other across the main tank condenser, and taking the tapping from the midpoint of the two series condensers, as in fig. 5. These condensers should preferably, be air-dielectric, and their capacity in series should approximately equal the capacity of the main condenser. Mica dielectric condensers of the required voltage rating have been tried in this position. Although they appeared to work all right with fairly low power, it is usually preferable to keep mica condensers out of the tank circuit and so the air dielectric type are recommended unless QRP is used.

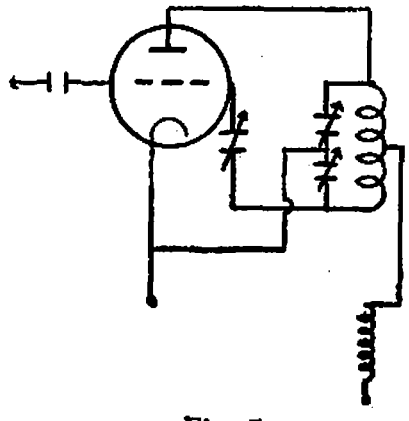


Fig. 5

The process of neutralisation using a two-turn coil and a flash lamp is familiar to all, but it should not be forgotten that this method, at best, only gives an approximate neutralisation. After this process has been carried out, a milliammeter should be connected in the bias lead and the grid current observed while tuning the tank condenser through resonance. The neutralising condenser should then be adjusted (and it usually needs very fine adjustment) until there is no flicker in grid current, or until the flicker is at a minimum when the tank condenser passes through the resonance point. Neutralisation should then be complete and only then is the time for the plate voltage to be first applied.

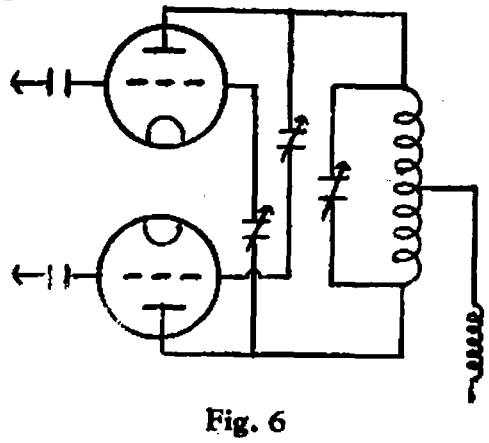


Fig. 6

So far, attention has only been given to single-ended amplifiers. One of the advantages of push pull is the comparative ease with which an amplifier may be neutralised. Two neutralising condensers are used as in fig. 6.

The neutralising procedure is the same as for single-ended amplifiers, except that the two neutralising condensers should be adjusted simultaneously. Once the correct setting for the neutralising condensers has been obtained, they may be left set for all bands. The circuit of fig. 4 may be adapted to push pull amplifiers, but results here have not shown any apparent advantage. This is probably due to the fact that the push pull amplifier has already the advantage of low input capacity and its ability to cut out the second harmonic is well known.

THE DOUBLET ANTENNA—SOME COMPARISONS.

By VK2NO.

The writer adopted this type of twisted feeder doublet some time ago, with the net result that nothing else would be even considered at VK2NO. Whilst admitting that more than one antenna is rather a nuisance, and that not everybody can afford the space, the trouble of using one for each band is amply compensated for in the results obtained. I have recently moved to a new QRA and tested this doublet on 7 M.C. against a well-erected "Zepp" under good DX condition, with an eye on Europe, in the early morning. There is no comparison. With the doublet, sloped slightly in a north-north-west direction, when I hear G's, I work them. The "Zepp" shows heavy losses in European results, even though sloped in the same direction. Using this doublet this morning, I managed to break the ice for ex VK2NR with VK. Jack was visiting G2ZQ, and we had a good chat. He remarked that he was indeed surprised to hook up with VK2NO for his first G-VK contact, knowing that VK2NO had a putrid DX QRA; whereupon I explained that I had moved to a spot where I can almost see Frisco from the shack window, and this, with the efficient radiator, was responsible.

A word of advice about these twisted untuned feeder doublets. It is not good enough to wind a turn or two of insulated wire over the tank and hope for the best. The coil must be adjusted somewhere carefully around the nodal point, otherwise the final stage will draw heavy current without doing much good. My method is to make a coil of two turns of three sixteenths copper tube, supported equally around the tank coil, and the two turns well spaced. One turn and a half is sufficient for ample coupling with the coil almost at the cold end of the tank. If the coil is made with wooden spacers boiled in paraffin wax and with these spacers arranged with an inside diameter just larger than the tank, the coil can be moved sideways for ready coupling adjustment. Clips on the feeders enable the tapping of the coil where desired.

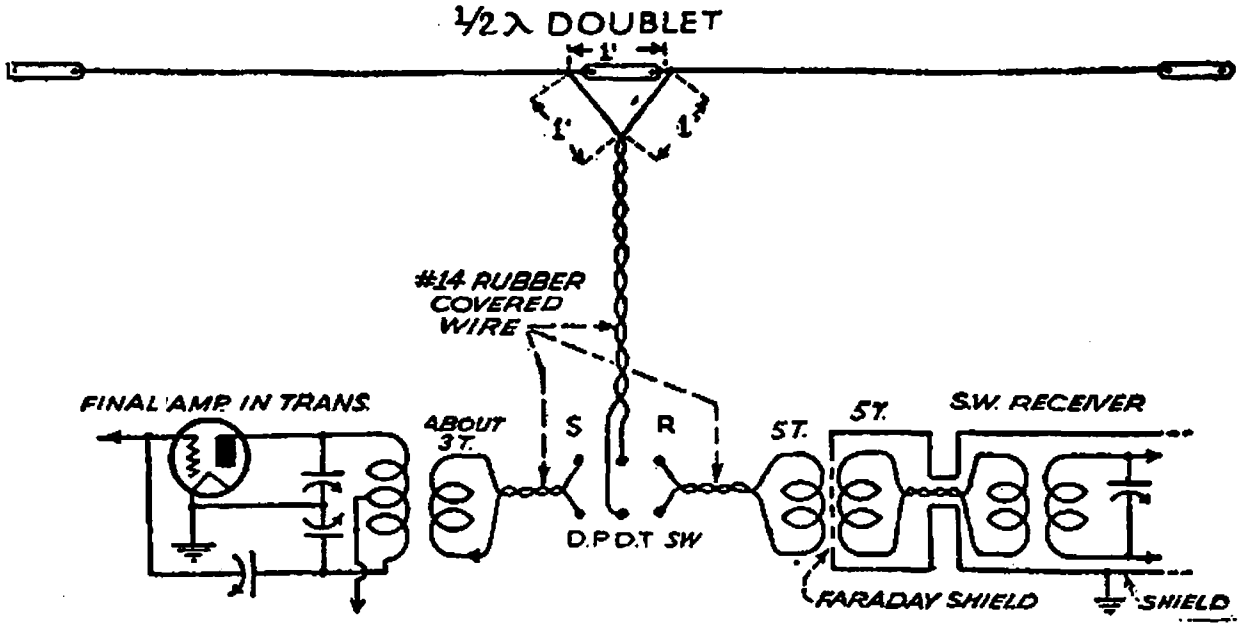
As an indication of the difference in indicated radiation. With a "Zepp" with 48 feet feeders, series tuned, indicated feeder current was .8 ampere. With the twisted untuned feeder doublet, the indicated current is 1½ R.F. amperes with the same input and lower plate current drawn by the P.A. tube. Of course the doublet must be cut carefully for the frequency of the particular crystal used, but is flexible over about 80 K.C. at 7 M.C. Another point, holding an R.F. wavemeter near the feeders with 1½ amperes therein, there is absolutely no sign of feeder radiation. They cancel perfectly. Twisted lamp cord is not good enough and with exposure to the weather, the efficiency will rapidly fall off. The thing to use is 14 V.I.R. lighting cable, twisted up. This will stand the elements for many years. In case, and I suppose this is so, many of the gang didn't see the table I published elsewhere last year (not the writer's work, credit goes to W6AJF in "Radio," U.S.A.), I am enclosing a diagram of the system and a frequency/aerial length chart which should be of use to every ham on the air. It should be noted that the length between end and end of the flat-top includes the one foot insulator length at the centre. As for reception, even with one feeder connected to the aerial terminal of the RX, and the other to the chassis, the results are far in advance of any usual aerial. Signal strength definitely goes up, electrical interference goes down, and selectivity goes up into the bargain.

Referring to the frequency-aerial length chart. For 28 M.C., cut the 14 M.C. figures in half, retain the 1 foot Y piece in the centre of the doublet, and away you go. The arrangement for the Y piece for these doublets is easily made by using a T

shaped wooden frame with insulators at the extremities of the T, and the feeder junction fastened to a small bobbin insulator at the bottom of the vertical.

Now boys, pull down those "Zepps." They are more inefficient than most realise.

Frequency in kc.	Ant.: length in feet.
1,715	273
1,800	260
1,900	247
2,000	234
3,500	134
3,600	130
3,700	126
3,800	123
3,900	120
4,000	117
7,000	67
7,100	66
7,200	65
7,300	64
14,000	33½
14,200	33
14,400	32½



Radio Trade Personalities

MR. R. SHARPE.

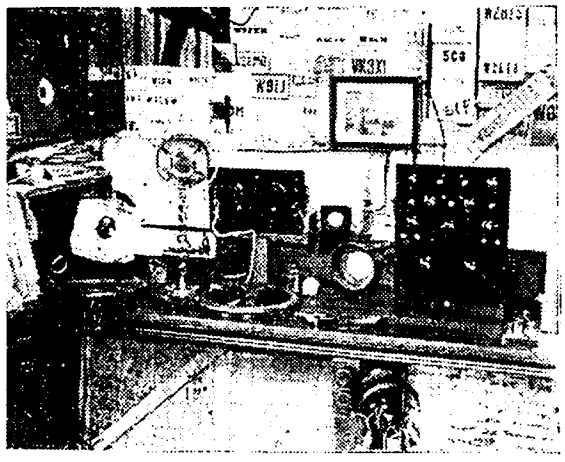
An interesting visitor to Melbourne during the month was Mr. H. R. Sharpe, sales manager in Sydney of the Amalgamated Wireless Valve Co. Ltd. He occupied the Melbourne chair of Mr. Howarth, away on sick leave, but since happily recovered. Mr. Sharpe described to our representative something of the Company's fine factory at Ashfield, for the manufacture of radiotrons. It has 100 feet frontage, laid out on modern principles, and equipped with the last word in plant. The weekly output is 7,000 radiotrons of different types, comprising 57's, 58's, 2A5's, 80's, 66's, 6D6's, and 42's. Mr. Sharpe stated that it is his Company's intention to increase the range of types. Over 100 hands are employed under ideal modern conditions, a specialty being the provision of the best radio selections during working hours for their delectation.

THE SMOKE NIGHT.

On Saturday, the 3rd November, a most successful Smoke Night was held at the Institute Rooms, at which the catering was under the control of Bob Dalton. About 40 members were present. Everybody enjoyed themselves, being entertained by items of interest from G. Thompson, R. Beuring, M. Gray, V. Kinnar,, and several others. We hope to repeat this type of entertainment at an early date.

Description of Station VK3ZX

VK3ZX is owned and operated by O. G. Oppenheim, 33 Saturn Street, Caulfield, S.E.8, Victoria. The transmitter is crystal-controlled and works on 80, 40, 20, and 10-metre bands, on either CW or 'phone.



The tubes used in the transmitter are 210 crystal oscillator, running with 400 volts on the plate. This is followed by another 210 frequency doubler, operating with 600 volts on the plate, and driving the final amplifier, which is a Radiotron UV211.

This tube, when used as a Class C. amplifier for CW operation, runs with 1,000 volts on the plate, and, for telephony operation, 600 volts.

The power supply is contained in the bottom section of the transmitter, and consists of 1,000 volts to supply the final stage, and an 800-volt supply for crystal and doubler stages. A separate 280 is used for bias supplies to the various stages.

On the table to the left of the transmitter the modulator equipment is located, and consists of a UV211 tube, wired in the 100 per cent. Heising system. From the photo it can be seen that meters are used in every circuit for indicating purposes.

On the table beside the modulator is an 11-tube Hammilund Comet type superhet. receiver, finishing up with a pair of 245's in push pull. This receiver is of all-wave design, using plug-in coils, and works satisfactorily down to 5 metres. It is fitted with special band spreading system, which gives ample coverage for all amateur bands.

Next to the receiver can be seen a cathode ray oscillograph, which is used for all kinds of measurements at this station, including tests on modulation.

Photo shows the actual operating position and auxiliary apparatus for telephony work. Twin turntables are used for speedier record changing, and the pickups are standard Senior B.T.H. type. The microphone in use is Piezo Astatic crystal model; behind the microphone can be seen the speech amplifier panel. This amplifier consists of 3 x 6C6's wired as triodes in a special decoupled-resistance-coupled circuit. Alongside the speech amplifier is the volume level indicator.

Auxiliary apparatus at 3ZX comprises calibrated peaked vacuum tube volt meter, for amplifier and radio frequency measurements; also several high voltage meters, and a complete 5 and 10 metre crystal-controlled meter.

The monitor for 'phone work consists of a standard rectifier type monitor ,using 1V indirectly heated rectifier as detector, feeding into push pull 45's.

More than 70 countries in all continents have been worked on CW, and 10 countries in five continents on 'phone.

The antenna systems are supported from a 60 ft. mast, and for 40-metre operation half wave zepp is used, and likewise for 20 and 10-metre use.

Centenary Convention, 1934

Victorian Division

VISIT TO THE P.M.G.'S RESEARCH LABORATORY.

On Monday, 29th October, an opportunity was given the Wireless Institute of Australia (Vic. Div.) to visit the P.M.G.'s Research Laboratory in Melbourne, through the courtesy of Mr. S. Witt and staff.

A large attendance of members and Interstate visitors were able to see the comprehensive collection of apparatus now used by this progressive branch of the postal service.

Commencing with a description of the aims of the section and the works in progress by Mr. Witt, the party, under the direction of Mr. Witt and Mr. Wright, spent the evening viewing the most up-to-date array of radio apparatus in the Commonwealth, the operation of which was so effectively demonstrated and explained by the various members of the staff.

In short, everybody enjoyed themselves, and no doubt envied Mr. Witt his wonderful array of gear.

Our thanks are extended to Mr. Witt, Mr. Wright, and those members of the staff who so kindly entertained us on an occasion not likely to be forgotten.

W.I.A. (VIC. DIV.) GENERAL MEETING.

A large attendance on Tuesday, 30th October, at the club rooms, comprising 90 members and visitors, had the pleasure of participating in the best general meeting held in Victoria for some time. The President, Mr. H. Kinnear (VK3KN), was chairman, and in his opening speech the visitors from Interstate and country received a hearty welcome. Many interesting subjects were mentioned by various speakers, and discussion followed. A description of the operation and preparation of our magazine, "Amateur Radio," was given by Bill Gronow (VK3wg), who particularly stressed our duties to the magazine's advertisers. The aims and opportunities of VK3WI, the Victorian Section's official transmitter, was clearly ex-

plained by George Thompson (VK3TH). Whilst Bob Cunningham (VK3ML) told us what the frequency measurement service was going to do for all VK stations. This service will shortly be inaugurated under his control.

A small committee was formed to get under way a Country Convention, at which all councillors will attend, in one of the main country centres. It was thought desirable to do this in order to give the country members the chance to discuss problems affecting them at a general meeting at which the council would preside.

Bill Gronow (3wg) had the pleasure of proposing the grant of a life membership to George Thompson (3TH) for the many services rendered by him to the division during his term of office as President.

The motion was ably seconded by Vaughan Marshall (3UK) and carried unanimously by all present.

Ordinary section business, such as 'phone allocation and QSL distribution, was transacted, and the members present voted it a most enjoyable night.

THE CONVENTION DINNER.

FINE NOTE OF ENTHUSIASM SOUNDED.

CO-OPERATION WITH DEPARTMENT STRENGTHENED.

A fine note of fraternal enthusiasm was the text of the annual dinner held at the Mariposa Cafe, Melbourne, on Wednesday evening, 31st October. Sixty hams and visitors sat down to well-provided tables, over which the President of the Victorian Division, Mr. H. Kinnear (VK3KU), held judicial sway for the occasion.

The Chairman, in his welcoming address, extended the thanks of the division to Messrs. Malone and Martin, of the P.M.G.'s department, for their valuable assistance during the year. He said that they were not like irate fathers, ready to pounce on the amateurs if they did wrong. Rather the amateur who did so found it better to go at once to these officials, when the matter would be peaceably adjusted. At the same time if a man deliberately looked for trouble, then he need expect no mercy from the department. Therefore he could only say that if they did wrong, then they could take what was coming to them. He signalised the sympathy of the department as the backbone of their own organisation. (Hear, hear.) After putting forward a special claim for further appreciation of their magazine, "Amateur Radio," the Chairman extended a hearty welcome on behalf of the division to its members, to advertisers and other visitors, and particularly to the three officials present from the department—Messrs. S. Witt, W. Conry, and P. Dunne.

He concluded by proposing the health of these gentlemen.

The toast was supported by Mr. Thompson (VK3TH), ex-president of the division. He agreed with the proposer that if amateurs did things they shouldn't do with their eyes open, then they deserved to be "kicked in the pants." But if they closed their eyes when they did them, then they ought to be able to prove an alibi. (Laughter.) If there were anything that the department could do for them which it was not doing, then he for one would be glad to know what it was. (Hear, hear.) The toast was enthusiastically honored.

Mr. Witt, on rising, was received with acclamation. During the years of his service, he said, he had heard the department called many things. (Laughter.) The Chairman had suggested that the department might be looked upon as an indulgent father. Well, all he had to say on that score was, that while the department did not produce any progeny, it was always able to produce plenty of regulations. (Laughter.)

The speaker eulogised the enthusiasm which marked the radio amateur. The amateur did not look for any pecuniary interest, but worked for the sheer love of his endeavour. The human being did his best work in the amateur field, and produced his most brilliant achievements. Referring to the recent contest, the speaker claimed that here were to be seen men of different nationalities, different tastes, different outlooks, united together in a common aim in a way not paralleled in any other field of activity. (Applause.)

Speaking as they did to one another from country to country across great distances around the world, the owners of the amateur shacks, though unable to travel, were able to cultivate deep and lasting friendships. (Applause.) He thanked the proposer and seconder of the toast, and again stressed the goodwill of this department. (Cheers.)

Mr. Conry also responded, particularly on behalf of the wireless branch. At the outset he highly commended "Amateur Radio" as a publication. He had not missed a single issue. (Hear, hear.) Nevertheless it was capable of still further improvement, and he understood that its promoters had the matter in hand. (Hear, hear.) He reminded those present that he was secretary of the institute in 1920, during a time of reorganisation after the war. At that time they moved from Little Collins Street out to Prahran, where on the third floor they lived among the pigeons. (Laughter.) There was always plenty of hard work. In those days Max Howden was in short pants. (Laughter.) All the same, he accomplished his feat of establishing communication with the United States of America. (Hear, hear.)

Mr. P. Dunne also spoke. It was, he said, his particular job to look at the gear. Usually things were all right—when he arrived. (Laughter.) Mr. Thompson deserved thanks for pouring oil on the troubled waters more than once. He was afraid that there was nothing at present to indicate any trouble between the Postmaster-General and the "hams." (Laughter.)

Mr. W. R. Gronow (VK3WG) proposed the toast of the Air Force Wireless Reserve. He regretted that he was not a member. (A Voice—They won't take everybody.) He claimed it to be one of the finest bodies the institute had been connected with. It had proved a valuable means of cementing friendships, particularly among the country members. (Hear, hear.) If a man succeeded as an operator with the R.A.F., then he was "on his toes." He referred with appreciation to Flight-Lieut. Wiggins, who unfortunately was unable to be present. He claimed that the standard set up by the Air Force was a very high one, and also that Victoria had done remarkably well.

Referring to "Amateur Radio," the speaker reminded the meeting that it belonged to the Institute. The R.A.F. notes each month were always keenly appreciated. (Hear, hear.)

The toast was enthusiastically honored, and received a welcome response from Pilot Officer R. Cunningham, who reciprocated to the full the allusions made to the fine co-operative feeling which existed.

Pilot-Officer V. Marshall (VK3UK) claimed that the reserve offered unique possibilities, and members of the Institute were deeply appreciative of the comradeship and esprit de corps. These existed practically in their entirety over the air, and both metropolitan and country stations benefited. Decidedly the Institute had good friends in the P.M.G.'a department and the R. A. A. F. of which they were all proud. (Applause.)

Mr. S. W. Gadsden, in a happy speech, proposed the toast of "Our Visitors." He stressed again the valuable band of friendship set up by radio. Regulaton No. Z7B, say, saved them from going altogether mad. (Laughter.) He claimed that wireless had played a big part in saving the Dutch plane during the recent air race.

The toast was drunk with musical honors.

Responses were made by Mr. Kernich, Wireless Operator from the U.S.S. "Augusta," who, amid laughter, expressed regret that their stay was only for a month instead of a year Mr. Malcolm Gray, South Australia, who raised a laugh by asserting that Federal Headquarters wanted payment of the per capita fees; Mr. W. Barber, Port Pirie, who paid a warm tribute to Mr. Malone, and stressed the unsuitability of the Federal Executive being in Adelaide; Mr. H. Morehouse, Tasmania, whose statement that every member of VK7 was also a member of the W.I.A., was received with applause, and by Mr. Rudolph Beuring, who said that though he was there as a visitor, he hoped next year to be a member of the Victorian Division.

The toast of "The Advertisers" was proposed by Mr. V. Marshall. When the publication of "Amateur Radio" was first mooted, it was realised at the outset that the support of the manufacturing and supply houses was an urgent necessity. They had none of the circulation figures and statistics dear to the heart of the advertising man. They hadn't even a draft of their proposed magazine. They had a thought only. Nevertheless the magazine met with instant success, and supporters came from all corners of Australia, and from outside. They should now feel it obligatory on themselves to support to the fullest extent those firms which were supporting them as advertisers. (Hear, hear.) Many thousands of pounds were spent by amateurs, so they should know where to buy. (Hear hear.) It was the advertisers that had made the magazine possible and were ensuring its continuance. Let the members recall that fact every time they made a purchase. (Hear, hear.) On the other hand, the Institute felt now that in the magazine they were definitely giving their advertisers something tangible in return.

Mr. J. Marsland (VK3NY) supported the toast, and referred particularly to the great success of the recent DX contest, and the fine part played by Messrs. Philips Lamps, Siemens (Aust.) Pty. Ltd., and Amalgamated Wireless Valve Co. (Applause.)

The toast was honored with enthusiasm, and was suitably acknowledged by Messrs. Dyer (Philips), Purcell (Siemens), and Sharpe (A.W. Valves). Mr. Alan Duke also returned thanks, and assured the Institute of all the support possible.

A vote of thanks to the Chairman proposed by Mr. Gronow, and the response, concluded a particularly fine get-together, which will undoubtedly be repeated annually.

Don't keep the stamps from a report. If you fail to QSL, it isn't honest.

Ivan Morgan attempts to Fish out some 5 metre waves from a wayside pool.

VISIT TO BALLAN.

On Sunday, the 4th November, as a grand finale to our Centenary Convention, the gang, including wives and girl friends, had a wonderful time at the Beam Station at Ballan by courtesy of A.W.A. through Mr. Appely. About 75 members and friends attended, and after viewing the powerhouse and transmitter assembly, not forgetting the antenna array, were most hospitably entertained at afternoon tea by the wives of the staff.

The afternoon saw a most serious struggle for supremacy on the cricket field between two sides of 15 or so. A fine show was put up by 3HW and 3WG, including others who lost their wickets at the first ball. However every one enjoyed themselves.

Geo. Manning, our "Eric Welch," was broadcasting the cricket on Ivor Morgan's 5-metre field set only to find that Len. Moncur had pulled the mike plug out of circuit.

Vaughan Marshall held the raffle of the day for various valuable prizes, of which, strange to say, Harry Kinnear picked out his own ticket. (Suspicions were aroused, but nothing could be proved.)

The presentation to Miss M. Hutchings, 3HQ, of the cup due for the 5-point relay won some time ago, was made at afternoon tea, by the President, H. Kinnear, 3KN, and Miss A. Marshall, 3YL, also received her cup won at our last exhibition by proxy.

The party broke up after tea time, and everyone voted it the best picnic ever held by the W.I.A. (Vic Div.).

Above: Group of W.I.A. Members with Friends
Below: Country and Interstate Visitors with Managerial Staff of Beam Station

"WILL EVERY LOCAL CAR-OWNER DRIVE WITH ALL SPEED TO THE ALBURY RACECOURSE?"

Such was the history-making suggestion broadcast from QCo by Arthur Newnham. Undoubtedly it meant the saving of the lives of the Dutch airmen and their passengers in the K.L.M. liner during the Centenary air race. Arthur Newnham is an ex-British army pilot, so promptly recognised the difficulties under which the airmen were suffering in their frantic attempts to effect a safe landing in the Albury-Beechworth districts. In his broadcast speech the operator of the air liner stated that it was only the line of car headlights concentrated, that told them a concerted effort was being made to show them a safe landing. This constitutes a lesson to Australia, which is lagging far behind in methods of communication with aircraft. Once again radio has bridged the gap.

Arthur Newnham was originally an employe of Veall's, in Swanston St., where he was in charge of the radio department, in addition to conducting that firm's daily radio broadcast.

Operating and Experimental Section

Conducted by VK3WY.

..DX Conditions.—During the last month, we have had the contest in full swing, and during the week-ends the bands, particularly the 7 MC band, have been just a horrible mush of QRM. General conditions have been more or less as follows:—

14 MC: This band has not been too bright, and a few European contacts round about midnight seem to be the best DX that could be managed.

7 MC: During the early morning, plenty of DX could be heard on this band, but seemed to be more difficult to raise than is usual at this time. Of the Europeans heard, D4BAR was easily the most consistent here. Two other stations which have been very consistent on this band are CT2BK and VQ4CRL. The latter averaged a good r6 and often reached r8. The band was often alive with VK's, answering his calls, and a fair number seemed to raise him. Judging by the stations heard calling them, VK3GQ, VK3KX, and VK3EG must have done very well on this band. Here's hoping for your logs next month om. During the evenings there has not seemed to be the usual number of W's on this band, but on several occasions between 22.00 and 24.00 they have reached remarkable strength. About this time, also, PK, AC, and J stations have been coming through remarkably well, but were rather difficult to raise from the Southern States. VK4 and VK2 seemed to get most of their calls.

Procedure—Good and Otherwise.

Letters and articles about incorrect procedure are very familiar sights in all magazines connected in any way with amateur radio. Of course, there is no doubt that they are needed. One only has to listen around the bands for a short while to realise that.

Operating faults are so varied and so numerous that it is impossible to attempt to cover them all, but here are a couple which may be noticed very frequently indeed. The first is the often heard, and more often cursed, long CQ before signing. Up to six or seven CQ's is perhaps excusable, but when it reaches anything from 20 to 60 CQ's, it's enough to make any decent ham tear his hair. The thing that beats me is to find the reason for these lengthy efforts. If you listen to any of our best DX men, you will realise that lengthy CQ-ing is not necessary for that purpose, and it certainly does not improve the frame of mind of any ham waiting to call you. What, then, is its advantage over the more correct call? If any ham has a real reason for it, I would honestly be glad to hear of it!

Having got that off my chest, let's get on to the next evil. This is the incorrect use of SK. If properly used, this signal can be mighty useful, and eliminate a lot of needless calling, but the majority of hams nowadays seem to think of it merely as a sign that the QSO is at an end, and entirely disregard the possibility of it being the beginning of another contact. When you sign SK, tune round the band, and see if anyone is trying to raise you, on the strength of your having signed SK. For the luva Mike don't sign SK, and then immediately follow it up with a CQ call. That's branding yourself as an A1 "lid," my son!

For publication in this section, we would welcome any short articles or paragraphs, or any suggestions for articles on any phase of amateur operating.

We are hoping, in the near future, to start a section similar to the familiar Experimenters' page in "Q.S.T." This should be just the thing for chaps having some idea or gadget which might interest other hams, but which is not important enough to warrant a full article. Please let's have them, OM. It is one way in which you can do your bit to help the Mag. along.

Federal Headquarters Notes

By G. B. RAGLESS, Federal P.O.

We have pleasure in informing all amateurs that our recent protest to the P.M.G.'s Department regarding the unlawful operation of an Australian Commercial station on the 7mc band has been rectified, and the station has now moved its frequency.

Some months ago when it became known that the BCL license fee was to be reduced we requested the department to reduce the experimental license fee a like amount, but our request met with a refusal. It was thought that we had a good case when it is remembered that a portion of the experimental licence fee is directed to the national service.

Regarding high-power permits, we would like to remind all W1A members to obtain the support of their State Divisional Councils when making their claims. All requests should be sent to the Senior Radio Inspector of the State concerned, and recommendation by the W1A will have considerable influence.

WAC CERTIFICATES.

Applications were recently received from VK2ZH, VK2H2, VK3DX, VK4EI, all of whose cards were found to be in order, and they will receive the certificates direct from 1ARU. We would like to remind everyone that the cards must be sent to Federal Executive and not direct to 1ARU. If the cards are sent to 1ARU no certificate will be issued, incidentally, applicants must be financial with their State division of the WIA or ARA in the case of New South Wales.

WIA CERTIFICATES.

Membership Certificates of the Institute are now available, and Divisional Secretaries will be pleased to supply members at a small nominal cost. The certificates are of striking design and colour, and well worth having, so get in touch with your State Secretary.

NEW CONSTITUTION.

The solicitor member of the Federal Executive, Mr. R. D. Elliott, has been very busy with his private work, but expects to have the revised new constitution available in the near future. This new constitution aims at uniformity of the WIA in all States, and all Divisional Councils are asked to give it favourable attention.

11th ANNUAL CONVENTION.

Federal Executive have decided that the next Convention will be held in January, 26, 27, 28th, 1933, at a centre yet to be finalised. We expect to announce the meeting place next month, in the meanwhile all members of the Institute are asked to bring matters for the agenda under the notice of their Divisional Councils. As soon as particulars are finalised all States are asked to arrange about their delegate, and deal with all the other aspects of a convention.

THE THIRD FISK TROPHY CONTEST.

6-POINT RELAY, DECEMBER 8-23rd.

The time of the next contest in the Fisk Trophy Competition is fast approaching, and Federal Executive have pleasure in presenting the rules.

We have fallen in with the demands for a relay contest, and if the requests are any guide, the success of this contest is assured. It will be remembered that all previous contests have been 5 pointers, but as this was obviously unfair to one State, this time we have a 6-pointer. The rules have been considerably altered, and this time there should not be any shortage of messages as in previous contests. There is no limit to the number of messages a competitor can originate as per rule 1. Every new station worked means a possible 6 fresh messages, and this can be repeated between the same stations on different bands. In past contests competitors have been too prone to remain on one band, but in this one a flexible station will count a lot if success is desired.

All State Divisional Councils are asked to provide prizes for their own members to create rivalry in their own State. If this internal State rivalry is aroused it will go a long way to help the State team to win the trophy. Queensland Division are the present holders, and are bound to fight hard.

The fun will be fast and furious, so get everything ready, and get into it and see if you can help your State to win the trophy.

RULES OF THE CONTEST.

1. Each station entering may originate messages starting with number one and following consecutively, there being no limit to the number originated, provided the following conditions are observed:—Not more than three originated messages to be sent to any one station on any one band. Messages must not contain less than 20 words or more than 25 words in their texts. The originating station must place the date on each message. All stations handling a message must retain the preamble and place their own call in it.

2. Messages can be originated in accordance with rule 1 by any station in any State. Each message must be relayed through no less than five States. By this we mean, and we want to make this point very clear, five States plus the originating State. Thus when a message bears the call of six States it is finished with and cannot he relayed any more.

3. Scoring will be as follows:—Every originating station can count one point for each message originated. Taking a message from a station and re-transmitting it to another three points. Receiving a message, but not re-transmitting it, one point. Receiving a message by the sixth State, that is a dead message, two points.

4. A copy of every message handled must be forwarded to headquarters, and all messages must be arranged in four separate stacks in accordance with their point scoring capacity as per rule 3. A statement of messages handled and a summary of his score, calculated by each entrant, should be included.

5. Each message must have the date and time when received and re-transmitted clearly marked on it, also the band received on and sent on. These facts are, of course, not transmitted, but are for check purposes. We do not require any lengthy log as in previous contests.

6. Messages must not be of the rubber stamp variety. Try and make them informative and interesting.

7. The dates of the contest will be: Start 10 p.m., Eastern Australia time, on 15th December, and finish 10 p.m., Eastern Australia time, on December 23rd, 1934.

8. All messages, whether they have completed the chain or not, must be in the hands of the Federal Secretary, Box 284d, G.P.O., Adelaide, by January 7th, 1935. Any reports received after this date will be omitted. All envelopes and packages must be clearly marked "Fisk Contest."

9. Any competitor detected breaking any of these rules or the P.M.G.'s regulations may be disqualified. Any competitor hearing another breaking either of the restrictions is at liberty to notify Federal Executive, who can take any action which the changes seem to warrant.

10. The awards for the States in the Fisk Trophy Competition will be decided as follows: The scores of the 5 (five) leading competitors of each State will be totalled, and the highest score thus obtained will be the winning State. The other States will receive positions and points for the aggregate in accordance with the totals they make. Should any State have less than five entrants the scores of those presented will be totalled.

11. The decision of the Federal Executive on all matters will be final.

Sample of test message forwarded by VK5XX at conclusion of the contest:—

No. 80 from VK4XX via VK3XX, VK7XX, VK2XX, VK5XX, VK6XX, 20/12/34. All competitors should be fully conversant with the rules of this contest by reading them several times before the date of starting, sig VK4XX.

(Received on 21/12/34, at 21.10 p.m. est on 3.5 mc.)

(Sent on 22/12/34 at 23.00 p.m. est on 7 mc.)

VICTORIAN QSL BUREAU.

Cards are on hand at the above Bureau, 23 Landale Street, Box Hill, Victoria, for the following stations, and will be posted on receipt of a stamped envelope:—

3AT, AY, BX, CL, CM, CW, DQ, DY, ES, ET, EW, FG, GX, GY, HT, IT, JZ, JR, JK, JN, JX, JG, KC, KM, KQ, LG, LP, LT, NG, NR, NW, OP, OY, OZ, PW, PZ, QZ, RQ, RT, RW, TY, UW, VU, WD, WC, WX, WZ, XK, XP, XQ, YR, YL, ZR, ZK, ZX. Messrs. Hecker, Simpson, Carey, Nihill, Bennett, Nye. Cards for FC, FM, GU, ZL being returned to senders if unclaimed within 14 days.

The President of the Reseau des Emetteurs Francais (R.E.F.) requests that stations on the air at 11.00 G.M.T. (9 p.m. Australian Eastern Standard Time) will observe one minute silence, in remembrance of the Armistice. 'Phone stations are requested to refrain from modulating their carriers during this period.

R. E. JONES (VK3RJ),
QSL Manager.

Have your call sign or W.I.A. put on the top of Sales dockets when purchasing goods.

TYPICAL TOPICALS. PERSONAL AND IMPERSONAL.

By "The Listener."

Mr. E. B. Foster, of Messrs. Noyes Bros., Melbourne, is on a business visit to Great Britain. While there he will visit the establishments of Messrs. Crompton Parkinson Ltd., of Chelmsford, and of Ferranti Ltd., of Hollinwood. Mr. L. C. Scarborough is on duty at the busy Lonsdale Street rooms during Mr. Foster's absence, and he will be assisted by Mr. W. G. Moffat, whose specialty is the electrical engineering department.

No less than five ex-commercial operators are at present engaged on the staff of Messrs. A. J. Veall's, Melbourne, and each is in charge of his own special department. They are:— J. E. Burgess, A. N. Ray, O. A. White, J. Carew, and S. G. Homberg.

One of the most interesting concerns in local radio circles is what is known as Australasian Engineering Equipment Co. Pty. Ltd., with which is associated Condenser's Pty. Ltd. The headquarters are at 415 Bourke Street, and the factory is in Latrobe Street. The factory has a fine modern plant and equipment, and the daily output of condensers averages 2,500. The sales manager at Bourke Street, Mr. W. Anderson, gave our representative the interesting information that during the last four years the output has represented one condenser a minute, Saturdays, Sundays, and holidays included. The whole of Australia is covered by the ramifications of the allied concerns.

Mr. K. Dyer is another of our busy radio personalities. He is in charge of the transmitting department of Philips Lamps for Victoria. As is popularly known, this great Holland concern, with Australian headquarters in Sydney, is world-famous for lamps, valves, neon and X-ray. Important new developments are pending, of which more anon.

An interesting device may be seen at Veall's Swanston Street store, by which a photo-electric cell operates a buzzer each time a consumer enters the store.

Divisional Notes

A.R.A.

(N.S.W.)

President—F. M. GOYER, Esq.

Secretary—R. H. W. POWER, Esq.

Just about the time that this issue appears upon our bookstalls, the A.R.A. Week-end Camp should have been held. This is scheduled over the 9th, 10th, and 11th November, and, judging by the enthusiasm evidenced amongst both metropolitan and country members, a good roll-up is assured. The Executive of the A.R.A. feel sure that the event will prove to be the most outstanding function in the nature of a "Hamfest" for many moons. It should easily eclipse anything that has previously been done in N.S.W.

Immediately following upon this we have the A.R.A. Inter-Zone Relay Contest, which commences on Friday, 30th November; so the N.S.W. Hams will have a lively few weeks before them. Another matter for congratulation amongst the V.K.2's, is the manner in which the N.S.W. circulation is steadily increasing, and whilst at the moment it is thought that we have not yet reached the figures being obtained by V.K.3, still "We're on our way," and, provided the past consistent increase is maintained, it is felt sure that V.K.2 shall lead. (Good work.—Ed.)

By 2HZ PUBLICITY OFFICER.

The Zero Beat Radio Club was awarded the prize in connection with the Men's Hobbies Exhibition, and are to be congratulated on their success.

A 10-point Relay Contest has been arranged in N.S.W., to be run just prior to the Third Fisk Trophy Competition. A 210 is for the winner and a type 59 for the second. Full rules appear in this issue of "A.R."

The Centenary Contest up to this point has proved a great success in N.S.W., and we are hopeful that a "V.I.S. Banger" comes out on top. When the scores are received after the second week-end, if one N.S.W. Ham doesn't collect one will be very much inclined to eat the proverbial hat—to wit, VK2XU.

The general monthly meeting of the A.R.A. was held on the 19th October, some forty members attending, and VK2UX, the President, took the chair. Three new members were elected, the secretary mentioning at this stage the remarkable number of nnfinancial members. Two visitors were present—Bob Fussel (VK2SS) and Mr. McMullen, who is unfortunately blind—the latter is a very ardent BCL listener and derives a great amount of pleasure from listening to the lectures. The rules of the 10-point Inter-Zone Relay Contest were announced, and some were severely criticised by various Hams, who pointed out that the Sydney Hams had little or no chance of winning. Rex Corthorn (VK2VG) generously donated an 80-metre crystal as a prize for competition amongst Sydney Hams only. Again the question of QRM during contests, especially on 'phone, was brought up. 2DA expressed regret that many amateurs spent hours tuning up their transmitters during contest hours.

Arrangements were finalised regarding the camp—catering, transport, etc., were discussed, —and from the tone of the meeting the week-end Hamfest at Kitchener Park, Mona Vale, will be well attended.

The feature of the evening was the lecture delivered by Jack Pinnell (VK2ZR) on "Wave Motion." Although the lecture was more or less on fundamentals, quite a number of facts and fancies were cleared up by the lecture, and everyone left with a much better idea of how his signals did penetrate to the ends of the earth.

TEN-POINT INTER-ZONE RELAY CONTEST.

INTRODUCTORY REMARKS.

The above contest has been organised to help create an inter-zone rivalry, and also to cement the many friendships that can be made over the air. For the contest the State of N.S.W. is divided into its normal eight A.R.A. Zones, plus the dividing of the County of Cumberland into two extra zones, namely, Zone 9 (north of Sydney Harbour and the Parramatta River); and, secondly, Zone 10 (south of that dividing line).

The contest is a message relaying one, similar to previous Australian five-point relays, and is open to all licensed amateurs in N.S.W. The winning station will receive a type 210 tube, while the second will receive a type 59.

You simply originate a message and relay it to another station in another zone, and if you receive one, yon can relay it into another zone other than the one it has been through before. The message is relayed until it has passed to all zones, namely, 10, then it is considered "dead."

RULES.

(1) The maximum number of messages that can be originated by one station is 40, and they must be numbered 1 to 40.

(2) Each message must contain not less than 10 words in the text.

(3) Messages can be originated by any station in any zone, and may be relayed through any zone through which it has not previously passed, and when the preamble bears the call of a station in every zone, it is considered complete.

(4) Allocation of Points.—One point will be given for every message sent, and one for every message received, i.e., if a station relays a message it will receive two points. Originating and transmitting a message counts one point.

(5) All messages, whether they have completed the chain or not, must be forwarded in log to the A.R.A., also all originated messages, and be sent to the A.R.A. by 1st January, 1935.

(6) There is no rule against schedules in advance.

(7) A special log must be submitted by all participating stations at the close of the contest showing number of messages handled, together with a copy of the messages.

(8) The dates of the contest shall be from 2100 Sydney Mean Time Friday, 30th November, 1934, till 2100 S.M.T. Sunday, 2nd December, and again from 2100 S.M.T Friday, 7th December, till 2100 S.M.T. Sunday, 9th December. Logs must be to hand at the A.R.A. by 1st January, 1935. Address your entries:—Association of Radio Amateurs (N.S.W.), Box 1734, J.J., G.P.O., Sydney, and mark the envelope, "Zone Contest."

INSTRUCTIONS.

(a) All message preambles must bear after the call, the number of the zone in which each station mentioned is situated, i.e., "HR NR 13 FM VK2HV Z2 via VK2XO Z3, VK2ZW Z4 and VK2OJ Z3, 9/12/34, Dx here has been good, etc."

(b) In all GQ calls the zone number must be mentioned when signing, i.e., "CQ, CQ, CQ, Z3, DE, VK2BP, Z5."

(c) As regards zone divisions, as no doubt arguments will crop up, each zone officer will have a copy of the counties in his zone. The zone officers are as follows:—

Zone 1.—VK2PE, Bourke. Zone 2.—VK2HV, Inverell. Zone 3.—VK2XO, Bellingen. Zone 4.—VK2ZW, Hamilton. Zone 5.—VK2BP, Hazelbrook. Zone 6.—VK2QA, Tullamore. Zone 7.—VK2FI, Girrall. Zone 8.—VK2OJ, Albury.

The main towns in each zone are as follow:

Zone 1.—Broken Hill, Bourke, Willcannia, Cobar, Menindie.

Zone 2.—Walgett, Coonamble, Quirindi, Gunnedah, Boggabri, Narribri, Inverell, Glen Innes, Tenterfield, Armidale.

Zone 3.—Kyogle, Casino, Grafton, Bellingen, Kempsey.

Zone 4.—Newcastle, Maitland, Singleton, Muswellbrook, Wyong, Gosford.

Zone 5.—Katoomba, Bathurst, Scone, Murirundi.

Zone 6. — Nyngan, Narromine, Dubbo, Wellington, Mudgee, Orange, Grenfell, Parkes, Condoblin, Wyalong, Hillston, Narrandera.

Zone 7.—Temora, Young, Crookwell, Goulburn, Canberra, Cooma, Tumut, Wagga, Junee, Gundagai, Yass, and Cootamundra.

Zone 8.—Albury, Corowa, Hay, Wentworth, Deniliquin, Jerilderie.

The above should give everyone some idea of the zone he is situated in; or if in doubt, get in touch with either a zone officer or VK2HZ. That's the test gang, and it is hoped everyone has a good time.

H. CALDECOTT, Traffic Manager.
W. MOORE, Publicity Officer.

Association of Radio Amateurs (N.S.W.).

"WESTERN SUBURBS WHISPERINGS."

ZO VK-2-MY.

With the Amateur bands already overcrowded and more Hams coming to light every month, one views with plenty of misgivings the influx of Semi-Commercials into the "Ham" bands.

Semi-Commercials appears to be the only way to describe them, as they appear to be in the strict sense amateurs, who are entitled to use a commercial or Governmental call and operate in the allotted amateur frequencies. VME, VHG, and numbers of mission stations, medical stations, etc., are but a few of those that are gradually invading our bands.

A glance at the Qsl card of "VHE," one of the invaders shows that the station (a naval experimental station) is allotted the frequencies 7000-7300 K/C and 6725 K/C for working depots in other States.

These stations are all Qro stations in comparison with the 25 Watts permitted to the average amateur all self-excited, and with notes on the average about T-3. If these are experimental stations, why not allot them an experimental callsign, and impose upon them the same restrictions as regards Qri, Qrg, and Qro in the amateur bands, as the humble ham has to comply with at present? Let them use the Commercial callsigns by all means outside the amateur frequencies, but when they slide into the amateur bands they should be compelled to abide by the conditions and restrictions under which the amateur has to work.

VK-2-FO.—Still busy rebuilding 40 M/x rig, but when heard the other night was R Max.

VK-2-FD.—Just finished rebuilding 4 stage Xtal rig on plate glass, including glass condenser. Looks a picture with a Dep 10 in the final.

VK-2-PT. — Experimenting with Doublet Antennas. Not very active at present, but works G-s on 40 M/x in the early evening.

VK-2-UY.—Cheers Harry on Xtal at last and sure FB here, too, 4 stage rig with 211 in the Final Works European DX.

VK-2-OD.—Works more than his share European DX, but complains of Qrm from 2 XU, whose sigs R Max plus at Toms.

VK-2-XU.—Hot favourite for the Centenary Test in VK-2.

VK-2-PH.—Ray still heard on occasionally with RAC Xtal, gets out very well, and works his share of DX.

VK-2-VW.—Heard on good authority that Vic is contemplating staging a comeback to the ham game.

VK-2-PG.—Ronnie is on the warpath. Someone has been using his callsign.

VK-2-MY.—With the assistance of 2 FO and a friend, and under the instructions of 5 PK, launched a 40-ft. mast with a decided radiation angle. (According to 5 PK, gauged to land exactly in W R Max.) First five Qso-s were VS-6-AQ R7 and four japs R6 W-s ? ? ? ? ? Nil.

VK-2-BX.—Bert still mixes 10, 20, 40 and 80 M/x together, but gets quite a lot of DX on 20 es 40. 2 BX will be travelling portable very shortly up the north coast, and would like the gang to keep an ear open for him.

VK-2-MN.—One of the few hams that start off from the jump on FB Xtal rig. Works plenty of DX, and contemplates fone very shortly.

VK-2-NP.—Owes me a new pair of cans. His sigs R Max plus here from MOPA with 45 es 46 PA. Finds it easier to work W than ZL since changing to new rig.

VK-2-GR.—Another convert to the Tritet. Which perks FB TBO 410 in pa gives over an amp in the skywire, but Alec more interested in BCL band than DX.

Farewell.—VZ-5-FBX es VK-5-PK send 73-s to all the gang, and are looking forward to Qso-s with them on their return to VK-5. They reckon their stay wasn't long enough, and both admit the brightest moment in the tour was when Davos (2 FD) Starver was recognised and abducted by a hungry Mung last Sunday week (Hiii).

THIS MONTH'S FUNNY STORY.

VK-2-RY.—Ivan was sitting in to the family steak when a knock came on the door: Does 2 RY live here? Yep, that's me, answered Ivan. Well, OM, I'm a bit of an experimenter, too. Just been trying some B Class, and I blew up a 46. Only have one left, so would you mind lending me one of yours till I see if that blows up too.

VK-2-Ry.—Just returned from holidays big game hunting out west.

DX.—Anyone that feels like throwing out their chest after a tasty piece of DX should have a squiz at Con (2 LZ-s) log book. 23 G-s in an afternoon is enough to make the average ham turn the game up.

NORTH SHORE ZONE.

ZO—2DR.

Plenty of dope this month, so lets get going. The Cent. contest is in full swing, rigs which have been subjected to exhaustive tests and adjustments, and are doing their stuff at last. CQ test, DX, WAC, Whacko! ! QRM—Well, yes, another station or two can be heard! ! Well, chaps, our zone now consists of 94 hams, so I'd better get the personal items off my chest.

2AF is doing remarkably well in the test. Dave has 4 stge xtal and real 25 watts input with 410 final and new EC3 rx. 2AE is using a doublet antenna with Collins Coupler on 40 and a vertical matched impedance skywire on 20. Alan of 2AH is now in VK4. Expect we'll hear from him before long. 2BA must bemoan the fact that he's away at sea during the Cent. contest. 2HY is putting all available time into the test, and has worked 18 countries so far. Roy is using 59 tritet osc. 59 doubler, driving a 10 on 20 and 40 mx. Haven't heard from 2JU this month. 2JY is quiet once more; evidently the come-back wasn't a huge success. 2LD has moved to Lane Cove, and is still in North Shore Zone. 2NE is going in for quality fone on BC band, and is making a thorough job of it. Still another victory to the YLs. Ned, of 2HA, went over the top with 2VG assisting as best man.

Congrats., OM, and I hope you get on the air again shortly at your new Lane Cove home. Very sorry to hear that 2OE is closing down. Hope you can stage a comeback in the near future, Ron.

2QF is a new ham at Newport. Please let me have your news, OM. Rex, of 2VG, is building s.s. super. 2VG recently worked a couple of V8s within half an hour, and there are only about four hams there! ! 2VP has been heard on fone on 40 at nite. 2AG works plenty of Ws with 4 stge xtal, using up 46s in final. 2AG also has class B modulator with 46s. 2DA has 2 rigs. 3 stge xtal with 46s in pp and 852 s.e. Harry uses four type 82s in bridge ckt for rectifiers. 2DY is slowly getting things shipshape, and will have exciter unit perking within about six months (hi). 2JA has FB rig with 852 final, also has FB fone. 2LQ at Hornsby is very QRL. 2SS is using pp 45s in self excited, and is competing with Peter 2PV, who has pp 10s in S.E. for QSO with first yank (hi). 2UP's bug is fond of fast dots. 2VG and 2VQ are about 50 yards apart. QRM! ! 2AW is new ham, and heard with xtal note. 2HY, 2LZ, and 2HZ are having a country contest. 2HY is now 40, 2LZ 42, and 2HZ 40. First to work 50 countries gets the 30 bob prize money. (One for Ripley.) During a recent sked with 5FM we both had our masts blown down by gales! ! (hi). 2DA is going hot and strong in the test with raspberry QRI. Tch, Tch, Harry. DUD, of 2DU, recently acquired a car, and has given up radio in favour of the auto. He'll be back before long, I hope. 2EZ has joined the air force, so has gone off the air into it. However, Jack has 2 stge xtal rig, and is thinking of installing an 800. 2GJ has been on with vy nice T9. Gets out FB, also hrd trying vy nice fone. 2HG has been very quiet. 2HL has been missing altogether. 2HZ has been trying out new tubes in PA. First RV218 gave up ghost, and now uses fifty watter with terrible note, owing to spurious osc. 2KA is also in the test, but his antenna came down during first week-end, and he missed a lot of points. Paul is building 2-tuhe super with multi-element tubes. 2KJ has staged a comeback specially for the test, and he seems to work plenty, too. 2LZ is going pretty close to winning this contest, as he's sure sticking at it hot and strong. Europeans simply roll back to him on both bands. 2UG is on occasionally, with fone and CW. 2VQ is always on the air. Works all kinds of things, and has had about 1500 QSOs in 4 or 5 months. 2YC still adheres to 10 mx. Here's a case of a "Good man always down never comes up." (hi.) 2WW is using s.e. rig, which has lately developed a terrible note. Electrolytic conked, OM? 2WW's is beautiful to copy. I am indebted to 2HY and 2AE for news supplied this month. If only chaps would rally round like 2XC, 2KM, 2HY, 2AE, 2DA, and a few others, the job of grinding out these notes would certainly be a blissful dream.

Now for a few notes from out Manly way, kindly supplied by 2KM. 2HF bas visions of pulling the Centenary off. Just completed 12-tube s.s. super with xtal filter, and the xmitter is sure something to be proud of. T250 bottles in final! ! Three new hams In Manly now—2AX, 2BS, and 2QF—all baving graduated from the ranks of the Manly Club. Andy (2AX) and Bill (2BS) contemplate QRO shortly. The club transmitter, 2MR, should be on the air any time now. (hi.) 2NG is still QRL with YLs and tennis. Putting out fb fone as usual. Gess u still hold title of fone merchant, Neil. 2DA advises that VP1AM and VP1AN are now VP8AM and VP3AN respectively. 2EL is back from ZL, and reports DX condx in ZL as marvellous. Eric is in Cent. Contest with pp 46s, but is getting the 852 ready with 8 type 88s in bridge as rectifiers. 2KM Is QRL at present. Wants South Africa for WAC. 2WQ heard with vy fb fone. Gets fb BCL reports. That's the lot from Manly this month. Now let's whip across the harbour and see what 2XC has to report re Mosman doings.

2HI is off the air while building a super using a Philips AK1, an octode! However, he's having trouble with it; guess the electrons get all tied up between the six grids of the AK1! 2HI, 2PV, and 2SS indulge in loop fone QSOs late on Saturday nights, suppose that's their way of shaking off the YL after effects! 2PV is DC at last, and aren't the locals pleased! Rumour hath it that a bi-pass condenser did the trick. 2VQ spends quite a bit of time down in Mosman. He has a new rig, which seems to get over to Europeans in the late afternoon very fb. He has worked 18 countries in 3 weeks, which is quite good for 7 mc. 2FM still knocks holes in the ether with his pp tens, and uses an adding machine to reckon up the number of yanx to his credit. He has turned into a R. F. Surgeon, and uses the juice from his final tank to burn off corns, etc. It is rumoured that he is going to patent a method of R.F. shaving, and so dispense with the usual blow-lamp! 2XC has been playing around with antennas, and found that the correct position of the single wire feeder differed greatly from that given by the handbook, but was using a full wave antenna, which wasn't too high off the ground. 2XG and 2XR are still in retirement, and the idleness of such beautiful gear as those two posses is a constant source of sorrow to the local gang. Heard a new ham in Manly signing 2AX. I sure hope he maintains the FB record of ole Geoff.—ex 2AX. And so ends the Mosman notes. Thanks, vy Ian, OM.

MAROUBRA BAY GANG NOTES.

By 2XV.

Since the beginning of "Amateur Radio" the Maroubra Bay gang have been constantly

asked for news; but up till now they bave preferred to be spoken of as the "Strong Silent Men of the South." Anyway, here goes as to their doings.

VK2WJ. John Peell (not the bloke with the hounds). This high-power merchant seems to be there at the critical moment when any DX is banging about. OH, ON, YM, PA, YI, U, etc., being his bag on 14 mc. this month. 2XX and 2WJ are both 14 mc stalwarts, and never move; but 2XV (who oscillates between 14 mc and 7 mc.) joins them in a cheery fone talk practically any time of the day or night. These three stations all operate within a radius of 100 yards, and boy, oh boy, the QRM. 2XK (Jack Heavey)—nothing to do with the heavy side layer—uses a 3-stage xtal rig with 59—46—46, and seems to land the DX on 20 just as well as anybody with his semi QRP rig. 2XV uses a 4-stage rig and several watts on 46's in shove-grab in the final 2XV is contemplating high-power, and methinks a hush hush bottle is on the way. Jack O'Dea (2FQ), our other member, lives a little further away from the hornet's nest on top of the hill. He also joins in our 4 way fone QSO's on 14 mc.

2XU Gilbert tells us he will be moving to Maroubra to join the happy throng at the end of the month, and incidentally, Gilbert, you have picked the worst place in Maroubra, down there in the hollow of the tram loop. We are looking forward to see how you fare with the QRM.

14 M.C. seems to be brightening up a little after being as "dead as mutton" for about two months. Europeans and P.K.'s, VS's, etc., are starting to filter through. 7m.c. seems to be O.K. from about 5 p.m. till 7 p.m., or 8 p.m. at night, and not so hot after that. W's are as usual predominant.

Incidentally, the boys round here are talking about forming a little club, as we have a few budding hams amongst us, so if anybody is interested, please get in touch with VK2XV, Phone FJ1581.

ZONE 2 NOTES.

Z.O (VK2HV).

The outfit of 2XQ is poked away out near Spring Ridge with an FB RX, but no xmitter; nevertheless John finds time to hike over to Yarranlan and have a yarn with some of the gang from 2HC on 80 MX.

Ray of 2HC has been on several times lately, but mostly on sked with Ivan of 3EG (late of 2EG, of Quirindi).

Ron, of 2RV, is still TNT, but expects to be on MOPA soon with 245's. Ron came into possession of an Xtal blank a while back es now fills in his spare time grinding same. Good luck, om. He sure was in his glee one nite when wking 2KR both on CW es stepping on the Bug.

Rons second op., Jack Musgrave, has been notified of his success in the last AOPC, and has been allotted VK2NF. Hearty congratulations are extended to Jack es welcome to Zone 2 om. (Jack, by the way, has just turned 16.)

Russ, of 2WT, has been too QRL to finish the new rig, but now shearing is over things should happen in the far north.

Recently 2MO and 2ZH of Gunnedah, motored over to Toddy of 2CR, where they were joined by 2HV and sec. op. Bill Picknell. Owing to the many discussions on Sniggle Sniggle Snoopers and 60 cycle ripples in 2CR's fb Xtal rig Bill almost forgot to sell all present "Amateur Radio."

Clem, of 2UR, Uralla, showed us some little bottles on the way home—not beer bottles either—T/250's, etc., es are they the berries. Clem was under the impression that ham radio in VK was dead, but promises to pump a watt or two into the ant. before long. Old timers will remember Clem as old 2CH.

Eddie, of 2KN, finds time to come on 80 now and again, and has rebuilt his rig, the result being fb fone. Eddie is sure an fb hand with the willow es it looks like operating will be forsaken for competition matches this summer.

Jack, of 2CR, has not received his call yet, but he finds time to buzz over to West Tamworth a couple of nights a week es chin wag with the gang on 80. Look out for that QRN, Jack om.

Cess, of 2KR, is still QRP, the only alteration of late being the substitution of new toobs for the MOPA, the 201A's having given up the ghost. Cess is looking forward to the time when Gunnedah has 240 AC, and is buying up big on AC gear. QRO, Cess?

Mac, of 2ZH, is still going strong. His rig at present is a QRP two-stage job, using 201A as CO and TB04/10 as PA. Using Telefunken modn. and about 2½ watts input. FB reports are received using this rig.

It is rumoured in the North-West that Mac and Cess are out for an old resavoir, and if successful intend putting both rigs in, and after the DX. Mark of 2MO says, "No power at the Resavoir NDG for DX." Hi, Hi.

2ZP's YL has a 7MC RX as a result. Arthur has been on 7MC fone quite a lot of late. Hi. Arthur wishes to contradict reports that he holds the record of having turned over 17 cars, says there were only 15. Hi.

No dope to hand from Andy of 2NA es we are quite sure there will be no signs of activity till the new year.

2JF has been QRT for months now es it looks like he can't get out of the habit. Can't you liven him up, Eddie?

2HV has been bitten with the DX bug of late es gets some fb reports from W with his 8 watts. Harry started to answer a CQ from J2KN the other morn at 0430 es when he woke up at 0545 was still calling Hi.

Well, chaps, don't forget to send in those notes to 2HV before the 10th of each month es if you are not a subscriber to this mag. drop your subs. along right away. 73.

ZONE 6 NOTES.

A.R.A.

Zo—2QA.

Old Man Static has been making his presence felt very much the last month. Guess summer must be somewhere handy. There seem to be quite a considerable number of commercials operating on the 30 metre ham band, the chief offender being VRQ, who uses a rotten tone modulated note and occupies most of the band. According to the P.M.G. handbook no stations are allowed to use I.C.W., yet most of the commercials continue to do so. We would not mind lending them a piece of our bands if they would use a decent T9 signal.

VR2RJ and VK2WH live about 100 miles apart; both have had their tickets about 10 years. They had their first QSO with each other on 7/10/34. 2NM has a condenser mike in the course of construction. Harry expects great things from it. Hope it goes O.K., OM. 2LM still on fairly regularly has been wearing out a few 82's. Still using suppressor grid modulation. Wonders why anyone uses anything else. 2NS has been on occasionally. He has a new antenna. Half wave on 80 with quarter wave Zepp feeders. 2RS had a couple of visitors in the persons of 3OR and 3KR. Rob intends leaving for VK3 shortly. 2QA

still using 59's suppressor grid modulated hasn't made any alterations this month. Guess it must be good.

ZONE 7 NOTES.
20—A. WELLS.

Two new call signs have appeared in this zone recently, both located in Wagga. 2BW belongs to Alf Moyle, formerly known as "Cast Iron Joe of 2UO." Alf has a fine 8-stage xtal rig with tritet and suppressor grid modulation. The President of the Wagga Amateur Radio Club (Rev. M. H. Winkler) is the second newcomer, his call being VK2MP. We wish them both the best of luck. 2YW has been making a name for himself on both 20 and 234 metres. On 20 he has been having fb fone QSO's with W, and gets 25 letters a day reporting on B.C. transmissions. Doug. says the YL 2nd op. is a great asset when things get slack. It's marvellous how the boys rally round when there's a YL on the mike.

2TZ is QYL with a "Militia Blonde." What kind of an animal is that, Bert? 2RH also QYL. The same applies to 2JA. There is a likelihood of two more tickets in Wagga after the next exam., which will make a total of ten —what-oh, the QRM.

2TH is rebuilding again, this time a 3-stage xtal job with 47 CO par 45's buffer and 211 final. 2PN is clearing the decks for action again—even had the YL making curtains for the shack windows. Ross is interested in 10 metres, and has a new receiver and transmitter perking on that band.

2FI is QRL work these days, but shows up on 80 metres now and then.

2WB is as far from activity as ever.

Would like to have some dope from the rest of the gang for next month, so send it along, boys.

ZONE 8.
Zo—VK2OJ.

The first week-end of the contest is over, and QRM has ceased temporarily. Conditions for the first part were fairly good, but QRN played havoc here later on Sunday night, making the weaker stations Q2. 3MR seemed to have little trouble working Europeans in fine style. VQ4CRL was putting a great sig into VK, and was R7 here. Some of the more powerful stations were the loudest heard here for some time. 2YI is not taking the contest to heart, and says his receiver not up to test standard. Harry has 40 watts on a 210 in P.A., and is tickled with the results. Tone is a bit RAC, but good copy. Is very QRL of late, and he has not been able to keep the weekly R.A.A.F.W.R. skeds. At the moment it appears that conditions for the coming week-end may be spoilt by QRN, hut hope it clears.

Jack 2EZ passed through on his way to VIM. but his time was too short for a survey. Hope you can manage an hour or two on the way back, OM.

3EG says it's waste of time to sleep while a contest is running. Hi.

MALLEE AND THE NORTH.
ZO-3WE.

Activity on 3500KC has been very solid. 3WE has rolled up over 60 phone QS in all States (ex. that elusive 6) and ZL to date. Hook-ups up to 7-way and including up to 3 States, are getting common. The only way to do any good on 80 at present is to work a hook-up of several stations, even if you have several crystals. One of the QRO gang is bound to lob on top of you. The Mallee 'phone gang have changed their name, and call themselves the "Chain Gang"—no; none from Coburg—but such an area is covered with new "links" being added each Sunday that the title becomes rather apt. Most consistent in Sunday afternoon hook-ups are 3'sCE, WN, WE, EP, PW, ZK, and 2 RS. One of the most enjoyable QSOs of similar kind included 5MD, 7CK, 7XL, 3CH, 3WN, and 3WE; "Doc" and "Poley" were sure tickled to bits. 5LR, 5IV (Vers IV on the mike), 2HU, 5YA, and 5BR can be heard any nite. Anyone not knowing how to blow rectifiers apply to 2HU. 3ZL still got a terrific wallop up here, but can't hear anything of the remaining Ballarat gang. 3PY heard and worked two or three times, but suffers badly—low power supply and an overplus of local QRM. 3KE still going strong. The Sunday morning gang—3NN, 3OR, 3KR, 3HL, and 3BQ—were a bit disorganised while Ken was away "feeding the fishes," bnt we heard a couple of good resolutions to get going earlier than ever on Sunday A.M.'s in future. The bulk of the Waggaites have been quiet, but 2YW (and Jess) heard a couple of times with very fb. quality both on speech and music. All work for the month here (ex. a bit of "entertaining" (?) on 200) has been on 80—can't hear a thing on 40 or 20. 3LH and self giving xtal mike very exhaustive tryout, and have come to conclusion that they are as far ahead on condenser mike, and latter is ahead of a "hard-back."

WESTERN DISTRIOT NOTES.
3HG-3OW.

Conditions in this district during the first two week-ends of the Centenary contest have been fairly good—the second session perhaps better than the first—so let us hope the last two will continue to improve. Here in Coleraine the only one of the gang doing much in the test is 3HG, 3JE having no suitable power supply as yet, and 3OW, 3PG not on much. 3HG has contacted 11 countries in 5 continents so far. 3PG did rather well the first week-end with very low power, but for some reason did not put in an appearance the second week-end. His input never exceeds four watts, and recent reports R6 from J and R7 from Europe! A new antenna has been erected at 3HG, and DX is much better, and a new receiver is contemplated. 3OW also has a new full wave antenna. 3GQ heard often in the test, and should show a good score. 3KX also very active. 3HL getting lots of DX; believe he is in the handicap event, using two beam antennas. Of the others in this district, 3JQ and 3BW seem to be the only ones in the contest. 5LG is reported to be in this district. but nothing has been heard of him yet. 3OR and 3KR had a great week-end up at 2RS of Clare station, way up past Balranald. Rob is leaving Clare soon and moving near Albury. Nothing heard from 3JA, 3XI, 3GJ, 3NN, 3HQ, 3KJ, 3LB, 3GR, 3NK. 3NQ is reported to be active again.—73.

KEY SECTION NOTES.
ZO-VK3BJ.

The debate which was scheduled for the section's meeting on October 2nd, unfortunately had to be postponed until the next meeting on November 6th. Several complaints regarding interference caused by other hams—3RW and 3LG—using out-of-date signals were received.

Conditions during the Centenary contest seem to be better than they have been earlier, but static is pretty bad. Stations from all over the world are co-operating in the test, and during the week-ends, especially in the early evenings, the 40-metre band is absolutely full of all types of signals. It certainly shows that

single signal supers are required by competitors here so that they can do their best.

Some of the consistent overseas stations competing heard here are PAQDC, D4BAR, CT1ED, VE5BI, G2ZQ, VQ4CRL, PK3ST. SU1EC, VS6AH, and many yanks and ZL's.

In Victoria 3KX, 8JQ, 3EG, and 3MR appear to be among the leaders.

3OC was unable to complete his new rig in time for the tests, but has since been heard putting out a very fine TG signal. The new rig is 59 tritet, TC04/10 buffer and 800 final using the latest ideas in split-stator condensers and aerial coupling systems. It is a work of art, and certainly is the neatest and best looking rig I have yet seen. The input to the final amplifier can be in the vicinity of 75 watts, which would sure make a noise.

Another ham with a new rig is 3WP, of Kew. 47 c.o., 46 f.d., and 210 p.a. are favored here, and in the few weeks since completion of the rig 9 countries in 5 continents have been worked.

3ZR (Yarraville) worked 3LX (Footscray) with only .0045 watts input to 2-E4o6's in push-pull. These super QRP fiends, hi!

3JO informs us that his brother, 7OJ, is likely to be back in VIM again soon.

It is with deep regret that we mention in these columns the passing of 3BC (ex 7BC). Bruce was not very active on the air since coming over here, but put in some good work in VK7.

A nice sig on 7MC comes from 3FB, who uses a 3-stage xtal rig 47co, 46 fd, p.p. 46 p.a. with input approx. 80 watts.

3DP may be transferred to VK6 soon.

3KC not very active; has only worked 2 yanks in two years, hi!

3PQ unable to take part in contest owing to being transferred to the mail branch of G.P.O. for Centenary. Very hard luck, om, especiallly when you went to so much trouble. too.

3Yo is trying out 20 metres again, but has not done much so far. Talking about 3Yo. How's this? I was working a station on 7Mc during the test, and 3Yo was on approximately the same frequency as 3BJ. With no "B" supply at all on my receiver I could still hear him heterodyning me. hi! 3CX is installing a buffer in his tritet, and hopes for DX. He obtained a xtal 7020kc from 3BQ, but when installed was on 7028kc. Where did extra 8kc come from? During two months 3VW has had 206 QSO's with hams in 10 countries. Uses input of 24 watts. He mentions that there is plenty of dx to be worked from 2-3 a.m. on 7Mc.

3Cs gets T9 repts from a 210 in a hartley on 7Mc. Ant. used is full wave Zepp hitched to a windmill tower. DX worked lately V8, PK, W es got R8 from VE5BI during tests.

3DT lives ½ block from 3LN; built new xtal set recently, and listened to "Bang Horsby" from 3LN on 200 metres for first time in six months.

3WL was recently appointed an R.I.

A strange thing about VKZ is that, although he only gives you a report of QSA2 R2-3. and you are sending single, he can get the lot, hi!

As future notes will be sent in by 3PX, the new Secretary, I will say cheerio to all the gang, and please, boys, let 3PX have all the dope you can.—73.

VK3 'PHONE SECTION NOTES.

By J. R. KLING, VK3 JB.

The monthly meeting of the 'phone section was held at the Institute Rooms on Tuesday. 25th September, at 8.25 p.m., the meeting opened by the Chairman (Mr. G. Thompson. VK3TH).

As usual, there was a large attendance of the "Gang," and a lot of business was handled, including the results of the 'Phone Competition.

The following members were present:—3XL, 3BY, 3SB, 3RI, 3BT, 3CB, 3OY, 3FY, 3BH, 3OV, 3YJ, 3LU, 3DH, 3ZO, 3KE, 3JB, 3GK, 3LM, 3LN, 3MK, 3HK, 3CR, 3PA, 3XJ. Allocations Committee. — Mr. Kerley, Mr. Lahiff, Mr. Manning.

The Allocations Committee had a hard job finalising the results of the competition, and finished up by giving their decision as compiled by the number of points allotted to the stations competing in the finals:—1st, 3BW, 117.32 pts.; 2nd, 3AM, 111.83 pts.; 3rd, 3DH, 109.27 pts.; 4th, 3BY, 109.25 pts.; 5th, 3LU, 105.5 pts.; 6th, 3PA, 103.62 pts.

Personal pars. from the 'Phone Gang:—

3DH has been rebroadcasting some of the other "Hams" during his morning transmissions, and they came over OK too.

3LN is experimenting with speech amplifiers.

3JR has been putting over some good studio piano duets.

3XL has been intending to give a few talks in between his musical items.

3OY is announcing "Camberwell" again. How Cum Alan still shifting the gear around, hi!

3CB still keeps the afternoon session lively with "HOT" numbers.

3LU puts on a good programme Sunday at lunch time.

3AM does likewise, and has some very good Richard Crooks numbers.

3PA is still getting out well with his Class "B" outfit. Keep up the good stuff, Perc, old chap.

3JB intends to do some short-wave 'phone on the 80 metre band when he is not on the Publicity" band.

3RI always has a good programme Sunday lunch time, too.

SHORT WAVE GROUP NOTES.

ZO—VK3XJ.

The Postmaster-General's Department spared no effort to make the tour of inspection of the Central Telegraph Office a success, when the group, together with members of other sections, paid a visit there on 26/9/1934, and all those who attended had a very interesting and enjoyable evening.

During the last week of September, Mr. Sones was in charge of the Australian Aerial Medical Services wireless exhibit at the Outback Australia Exhibition at the Melbourne Town Hall. Members of the group have given much valuable assistance to the success of the exhibit, especially Messrs. Sones and Rees, together with 3JO, 3WQ, 3XJ, 3ZJ, who were instrumental in the decoding of the messages.

At the meeting of 10/10/'34, a very interesting and educational paper on "Stability in Short Wave Receivers" was read by Mr. Quick, and discussion followed.

The Centenary Convention will have been concluded by the time these notes are published, and many good times enjoyed by those who attended.

VK4 NOTES.

Owing to the resignation of Mr. G. Harmer from the position of Assistant Secretary, VK4US was elected to the position. Mr. Kelly presented a report on the activities of the Technical Development Section. The 5 metre portable transmitter and modulation system

has been completed. Work on the multivibrator is progressing satisfactorily.

A picture benefit is being held at the Tivoli Theatre on 16th and 17th October for the purpose of raising funds for the purchase of a "cathode ray" tube and associate "trigger circuits."

All correspondence for the Institute should be addressed to the Secretary, Box 1524V., G.P.O., Brisbane.

JOTTINGS.

Conditions for the first week-end of the Centenary test were very bad, and DX was difficult to raise. 20MX was patchy for a short period round about 11 p.m. A few Europeans were just audible. but the mush came up quickly. On 40MX yanx were the best bets for the evening, and Africans in the mornings around 6 a.m. VQ4CRL and SU7EC being R7 here at times, and I think everyone raised them! By the number of stations calling them it looks as if 4BB, 4EI, 4GK will be well to the front.

4UU doing good work with the yanx scored approx. 220 points, and 4USf 289. 4RY worked that elusive African required for his WBE. Hi, Bill! But his luck in the Centenary test was bad, the nett result being W9, J2, J2, and he lost SU7EC.

4WT heard once or twice, but is very busy building "Bugs" and a QRO transformer.

4WD was handicapped by power QRM, so he threw it in.

4JF was working some Japs, but didn't stay on long. Guess QRM from that much criticised note of 4US was too hot!

4US was unlucky in losing a G2 who was blotted out by VK3 QRM. Charlie won't part from his RAC note even tho VK complaints are many. DX reports are good! His p.p. 46's put over 1.5 amps into his ant. Fb!

4UU still using his p.p. 210's with fb results.

4WA, a new ham at the Valley, uses 15 watts on a 47 in T.N.T., and a Collins network ant. Jack gets out fb, but is having trouble with power QRM.

4JP getting out fb with his p.p. TB04/10's. DX calls Jack, but he can't hear it!

4WB, 4GU, 4FB are three locals who are making pests of themselves by using fone on 40 mx during DX hours.

VK6 NOTES.

By VK6CP.

Owing to lack of finance, the proposed remodelling of 6WI was abandoned for the present, and it was generally agreed that the stn should be put on the air in its present form. The question of operators to get the gear on the air resulted in two of our most level-headed boys in RL and RX being given full powers to get things in order. At the time of writing the station has not yet been heard. 6SA has been asked to take charge of 10 mx and 5 mx work, and already has his plans made out.

It is understood that MN and CP have signified their intentions of doing things other than talking.

We again appeal to members to become financial. Remember it was the oid WIA that assisted you to get that ticket, although some appear to have forgotten that fact.

The circulation of this mag. to xmitting members is about 30 copies, but only about 10 stns are ever heard.

6CP has undertaken to be the DX watcher to report to VK3 with reports of condx, etc. This matter will receive full attention in future issues.

When will DX conditions settle down ia the query of those few hams who are operatting. 40 mx at present is very patchy, with an occasional spot, when a KA or PK answers our frenzied calls. Fading between the hours of 7 and 10 p.m. local time is from R7 to R8. 80 mx is getting very noisy and the absence of ZL sigs is a forecast of this band's early demise.

Local signals on 40mx are weak, but during daylight hours country hams come in at good QSA.

6SA reports a couple of meagre QSO's with W's, and states one was a Lady OP. He is also very much taken up with the fine keying of the lady OP at VK5EM.

6KB now on xtal, and now hopes to QSO S. America.

6MN still raking in a few VK's, and on one recent Sunday eve kept this scribe waiting to click him with a QSP QTC for two hours. MN was QSO at VK5, and, if fading had not taken a hand, would have still been going strong.

By the way, 6SA has a new rig, and reports from observers say it is sure the goods.

6CX has now got things in very nice order, and his FBT9 sig is the berries.

VK6CX worked a YL and didn't know it —Miss May Mann at VK5EM. She certainly knows how to wield the brass.

VK6PK is building a new shack.

VK6WP, VK6SA, VK6BN, VK6MY are located within 400 yards of each other. VK6BN, VK6SA, and VK6MY are only about 100 yards apart.

VK6SA, after practising a few YL QSO's on VK5EM, worked W5DUR, the YL who wrote an article in the August "Q.S.T." Her OM is W5NW—"Soupy" Groves.

Heard in the Cent. tests: VK6FM, VK6SA, VK6MN.

Mr. Alan Watson, of South Perth, hopes to get his ticket at the next exam. He is a brother of Jack Watson, who held the call VK6JW a few years ago.

Heard now and then are.—HD, DH, FH, CY, HW, and, to cap all, up comes 6HF again! Say, Hughie, we are sure pleased to hear you again, and don't forget the old WIA meetings.

'Tis rumoured that the old combine, 6LG and JS, are linking up again, while PK is busy chasing QRM from mains out of his receivers.

BN threatens to do some homework soon.

FO still pegging away.

BB will surprise on 10 and 5 mx, I hope, and LJ might do better with the key than the bat.

RX and RL have now an opportunity to show their sterling powers in getting 6WI going.

CP doing his best to make these notes interesting, and keeping in touch with country hams. Also threatens to come on with a 3-stager, finishing up with push-pull 46's. Doings of Country Hams— 8pt. B l.c. Hdg.

News comes from 6LK at Northam, per medium of a letter, that his station is on the air, using accumulator B supply and a 100 ft. vertical stick. Minor should get out. Nothing has been heard of him locally, and he also states that none of the locals are heard up at the home town.

LR, also of Northam, was heard on a recent Sunday with some decent fone on 40. Efforts to raise him proved futile, but LR seemed more concerned about grinding out canned music than QSO-ing anyone.

6FM and XL, both of Wiluna, are con-

sistent on 40 on Sundays, both coming in wtih plenty of punch. FM had the misfortune to blow a pair of 81's, and the last time I QSO'd him, he was using his 80's, the only difference being noticed was a bad chirp.

6KP, of Meekatharra, not heard, but have often heard stations calling him on 20 and 40.

GS and RS, of Harvey and Narambeen, not heard, while FL, Albany, comes to light at times, but, owing to condx, the signals are very patchy.

Another one known to be on the air is KC, of Katanning, but, as he is on QRP, have not heard him.

Great rejoicings at the shack of 6RW marked the work of his first ZL on fone on 80. The contact proved most interesting, as it evolved into a four-way contact with two VK8's taking part, all on fone. The locality of Wagin seems to be very suitable for Interstate and ZL working. Have heard RW working fone with VK2, and giving them R6, while it has been impossible to even hear the VK2 in the city. RW deserves all he gets, as, working off his own bat, with only a town supply of 220 D.C. to play with, he has adapted his gear to work very smoothly indeed. The latest is a 2-stage speech amplifier with town mains supply.

VK7 NOTES.

Z.O.—VK7PA.

At the general meeting held on the 2nd of October, it was left to the Council to arrange for a delegate to attend the Convention in V.I.M., in conjunction with the Centenary celebrations, and at the meeting of the Council it was decided to send the hon. sec., Mr. H. M. Moorhouse. The November meeting is to be held a week late, to enable our delegate to get back with the details of the Convention.

It was with much regret that we learned of the passing of VK3BC, ex. 7BC, a very fb chap, and a loss, not only to those he leaves, but also to hamdom, and all VK7's join in extending our deep felt sympathy to his bereaved relatives.

7RB has tendered his official resignation, which was received with regret, but, owing to his having found employment in V.I.M., this was imperative, and VK8 takes another "7" to its list.

7JH has been using bis tritet xtal rig on low power with very good results, so look out when he gets his final amp. going! His latest effort has been in the use of twisted pair feeders on 40 mx, and says it is the goods.

The rig at 7PA is perking fairly well at last, and it is hoped to do a bit more H.F. work again.

I think I can safely say that 7JB is our most active member in the contest, and should pull off the VK7 section. He works DX all night, and sleeps mornings and early p.m., so is earning his score.

7BJ and 7KV are heard regularly on 40 mx.

The usual 200-metre work is still going on, and 7BJ is a new one to this section of the game, being the resistance coupling addict. 7JB has given up his 200-metre work during the contest, so the noon hour on Sunday is rather bare at the moment.

As soon as this month—October—is through, it is hoped to get going again on a field day or two, to which all will be looking forward. This matter will be finalised at the November meeting.

RSGB-BERU NOTES.

Via G6HB, ZE4AI, VK2XU.

The activities of British amateurs during the summer months were, as usual, confined in the main to field days and conventionettes. Numerous successful outings were organised by the RSGB research and experimental sections interested in 56 mc problems, and a summary of results was given by the manager of the group, G2NH, at the first London section meeting on September 8.

The ninth annual convention broke all records for enthusiasm and attendance, over 200 members being present at the different meetings. More than 20 well-known British Empire and foreign amateurs were present, including ON4UU, ON4AN, ON4HM, 4PA, PAOASD, OGG, OUB, OFB, VQ4CRH, VN2FP, ZE1JH, ZL1FQ, VP7NB, and SU1MM.

During the convention, a statement was read by the president, Mr. Watts, G6UN, in which he outlined numerous improvements in regard to licence conditions. The chief improvements related to the British amateur bands. For five years, rather severe tolerances have been imposed at the edges of our bands. These have now been reduced to a 5 kc minimum at the end of all bands, except the high frequency end of our 3.5 mc band—3730 kc. Members are advised to set their nominal frequency 0.1 per cent. inside the new bands, in order to prevent their transmissions appearing outside the bands, as a result of xtal or tx variations.

The next important concern applies to those interested in television. For the first time, British amateurs are to be officially licensed to carry out television transmission tests, and the frequencies allotted are those between 30 and 32 mc. The present 28 to 30 mc band will be used as a sound channel.

The second edition of "A Guide to Amateur Radio" was published in time for sale on the Society's stand at the RMA exhibition, Olympia. The new guide contains useful informstion contributed by some dozen or more of the best known British amateurs.

The RSGB will be pleased to forward individual copies of this handbook to any address in the world, at a price of 8d. per copy. Bulk supplies for overseas will be sent at a price of 8/- per dozen, carriage paid.

The international 28 mc contest, organised by the RSGB, commences on October 1, and it is anticipated that a very large number of amateurs will compete. In connection with this contest, the council of the RSGB have decided to annul rule 6, which required a minimum strength of QSA3 to be given before points can be claimed.

The RSGB 14 mc low power telephony contest also commences on October 1, and continues to March 31 next. It is expected that many new records will be established during this event.

The membership of the society is now 2,200, and continues to increase at a steady rate. The overseas subscription to RSGB-BERU amounts to only 12/6 per annum. Apply to VK2HC.

All district notes should be in the Magazine Secretary's hands on or before the 18th of the month.

DIAMOND PERTRIX BATTERIES.

A visit to the factory where Diamond-Pertrix dry batteries and cells are created—at 119 Hawke Street, West Melbourne—is something of a revelation. These famous batteries are almost too well-known to radio amateurs to justify any recommendation. Nevertheless, it was interesting for our representative to learn from the sales manager, Mr. C. F. Swift, that the battery is classed as A.1, O.K., and all the rest by the following big users: The Army, the Navy, the Airforce, the Railways, the Police, the Post Office, Broadcasting Stations, Talkies, the Inland Missions, and Australian Lighthorses. To have these entries on one's ledger is rather momentous. The secret of the success of the Diamond-Pertrix is its consistent service, which, of course, is an essential factor to any operator. Mr. Swift mentioned some excellent unsolicited praise from certain Victorian amateurs, and attention is directed to the firm's notification in this issue. The ramifications of the firm cover the whole of Australia, and there is another extensive factory in Sydney.

Victorian amateurs would be welcome at the Hawke Street factory, where Mr. Swift has a lot to show, of which he is pardonably proud.

SIEMENS-ELLIOTT MINIATURE INSTRUMENTS.

The firm of Siemens Brothers & Co. Limited, Woolwich, England, in association with Messrs. Elliott Brothers (London) Limited, has produced a very complete range of Miniature Instruments particularly adapted to the requirements of the amateurs, and the radio industry in general. By the installation of large numbers of these instruments in Australian territory, it has been conclusively proved that they are unequalled from the points of view of accuracy and reliability.

Moving Coil, Moving Iron, Thermo Couple, and Metal Rectifier Instruments have been developed in all ranges to comply with the requirements of the radio world.

Particular importance is attached to the fact that each instrument is individually hand calibrated against a master standard, thus ensuring the highest degree of accuracy attainable in instruments of this description; for example, all Moving Coil Instruments in this series possess a guaranteed accuracy of within 1 per cent. of full scale value.

Miniature Instruments can be furnished with either bakelite or metal cases of the flush or surface mounting pattern with practically any size of dial, of which the well-known 2½ in. "MR" series is the most popular.

ALAN S. DUKE PTY. LTD.

Reader will be particularly interested in the above firms notification in this issue. The well-known Westinghouse Lines constitute the solution of most difficulties, and the firm will soon have available fresh stocks, and invite application for their interesting pamphlet.

R.A.A.F. Wireless Reserve Notes

VMB

Total No. of Messages 990

Average per Station 141.5

VMB 1

Total No. of Messages 441

Average per Station 147

2A2

Total No. of Messages 232

ROYAL AUSTRALIAN AIR FORCE WIRELESS RESERVE, FEDERAL NOTES.

Activity in nearly all States seems to have been at its peak during the past month. VMB and VMD staged a contest, which, although not very well supported, shows that there is still a fair amount of life in both districts. VMC, of course, is all het up over the forthcoming convention, whieh, with the Interstate and country visitors, should be the best ever. We shall have the pleasure of having 5ZI and 7ZI with us, as well as other Reservist visitors. With all these arrangements on hand, there has been little time for normal training, but convention traffic made good practice.

It is with regret that the resignation of 2ZI had to be accepted, owing to business reasons, as 2ZI is the only man to have put VMB on its feet and organise a very active district. In his stead we have to welcome 2Z3, ex. TB2, who will have taken over control by the time these notes are in print.

Many members have been enquiring into the Reserve's co-operation in the Centenary Air Race, and pointing out the wonderful opportunities of doing some real work. It has certainly been disappointing to have to sit back and listen to the "commercial stations" for the race progress, instead of being able to watch for ourselves. Perhaps the Reserve could have been of great value in the case of the Dutch machine which lost its wav over Albury and nearly met with disaster. It is part of our job to understand ground signals and methods of conveying same to aircraft, and if we had been called up for service, a communication channel second to none could have been provided.

In August, 1933, a letter was sent to the Air Race authoritics, suggesting that the Reserve might be incorporated in the communications system, even in some small manner, but, unfortunately for us, the letter was never answered. The Reserve has a good cause to feel hurt because of the Air Race Committee's actions, as never before has there been such a splendid opportunity for the Reserve to fulfil one of its main objects.

NOTES AND RESULTS ON VMB-VMD RELAY CONTEST.

2Z1.

The results of the recent VMB-VMD combined contest were not as good as expected. Out of the 20 members eligible for competition, only 10 submitted score claims. Eleven members from VMB and nine from VMD were eligible, and out of this number only six from VMB, and four from VMD entered.

A number of logs submitted did not comply with the rules, so necessitating additional checking. In nearly every one of these cases the score claimed was under the number of points to which they were entitled to. It is therefore suggested that, in future, members examine more carefully the rules governing similar contests. Another contravention noticed was that certain stations were operating outside the set time limits, again showing the tendency to overlook rules.

It is hoped that future Reserve contests will be better supported. This being the first in either VMB or VMD, we may more or less class it as an experiment. It certainly showed that general operating is not as high as it could be. In one or two isolated cases heard, the operational standard was very low, whilst in others it was found to be excellent. Another item is Reserve procedure. Some members appear to have forgotten that we have a "Signal Training Manual," containing specific signals for the elimination of a great deal of plain language and unseemly conglomerations of dots and dashes whilst checking over received messages. Reserve procedure may not be the easiest to learn, but I would particularly impress upon members the importance of correct procedure. When in contact with another station, and not certain of a procedure signal, do not put your communication into P/L. Look it up in your manual, even if you have to give the "wait" signal while you do it.

Conditions during the contest were far from good. Thundred storms were reported by four members, power interference from two, and, on the whole, signal strength was not as great as it could have been. Credit is due to the winner, whose power input did not at any time exceed five watts, and very good work was done by the runner-up, 2B2, who used approximately two and a half watts input.

FINAL SCORES.

2A2, 232; 2B2, 192; 2A4, 190; 4A4, 120; 2A5, 119; 2B5, 103; 4B1, 101; 2B3, 45; 4B3, 41; 4A5, 18. Non-competitive scores:—2Z1, 204; 4Z1, 33.

SECOND DISTRICT NOTES. OCTOBER, 1934.

Activity for October consisted chiefly of the test with members of VMB. The actual results of scores, etc., are not yet known, but it is anticipated that VMB have the totals all their own way.

The usual Sunday night broadcasts are now being conducted on 7317 kc's, instead of on 4155 kc's, on account of static, but reliable contact with all stations is practically impossible, on account of skip distance. In future, broadcasts will take place at 09.00 hours, Sundays, on 7317 kc's. Should this not provide desired contacts, each section may be appointed separate watches, to ensure reliable communication.

4A2 is off the air, and is requesting to be placed on the "shelf," or retired list, until ready for working again. 4A5 and 4A6 very keen on traffic. 4B1 unable to obtain suitable alternator, so has now got 350 volts of batteries on 245 valve. 4B3 has been unable contact with others, on account of recent change in frequency. 4B5 has shifted to Brisbane, but present address only temporary, and not on watches at present.

Traffic totals other than contest traffic:—4Z1, 16; 4A5, 4; 4A4, 2; 4A8, 5; 4A6, 1.

Royal Australian Air Force Wireless Reserve—

During the past month, activity in general work has dropped off. The contest provided opportunity for excellent training, particularly in the use of "difficult communication" procedure, owing to the prevalence of heavy atmospherics throughout the duration of the contest.

Next month will see VMB back into its stride again, with practical training in the capable hands of 2Z3 (ex. 2B5), the new D.D.C, who will have charge of all W/T communications. It is hoped that during this month all members will have become fully conversant with Part I. of the Signal Training Manual, so that a start may be made on the advanced procedure contained in Part II.

One of VMB's most active men in 2B2, the runner-up in the recent contest, found he could not continue activity, and has reluctantly passed in his Reserve insignia. We are all very sorry to lose him, and his place will be hard to fill.

As these may be the last notes I will be writing as D/C for VMB, I wish to thank all those members who have stood by me since the inception of the Reserve in this State. I have made many new friends, and my one wish is that the Reserve will flourish in future months, more so than it has done during the year I have held office. 2Z1—VK2BP.

R.A.A.F. RESERVE NOTES, 3rd DISTRICT.

3ZI—VK3UK.

For the first time since VMC came into existence, nearly five years ago, regular schedules have been suspended. Because of the fact that so many members wanted to enter for the Centenary DX Contest, no schedules have been held during October at all, in consequence there is a dearth of news for our allotted space this month.

Amongst the Reserve stations taking part in the contest, 3DI seems to be quite the most successful, judging from the number of stations heard calling him. 1AI had one very bright period, when he worked 10 countries in some 14 contacts. 3Z2 has quietly been piling up countries, and his total will be a large one, despite the fact that he has not been able to devote full time to the contest periods. Incidentally, his receiver is a revelation, and, even amongst its S.S. brethren, quite the most selective I have used. I heard it tune over two stations 1.25 kc apart, about R5 each, and there was a perceptible dead spot in between. 3ZI has spent the month in a complete rebuild. The receiver and the CO and FD stages of the transmitter are finished, and the whole outfit should be ready for work by the end of the month. A great deal of sleep was lost during the Air Race, listening to the traffic through the R.A.F. stations from London to Singapore, and the R.A.A.F. stations at Darwin and Charleville. We stood by for four hours when Parmentier and Moll were lost, in case there was some way in which we could assist, but, as they worked throughout the night on 600 metres, there was little we could do except listen to a drama more thrilling than any talkie.

3C3 and 3C6 put over a grand bit of co-operative work with Army portable stations located in the Grampians. The mutual help given, of technical assistance on our part and traffic practice on theirs, as well as the enjoyment both parties had, indicates very definitely that this is only the first of many such co-operative stunts.

3CI paid a flying visit to Melbourne one Sunday this month, and, as he will be unable to get down for the convention, 3Z1 was able to detail all the matters for discussion at our meetings then, and get 3C1's ideas and comments.

VMC would like to congratulate VMB and VMD on the contest they have just staged, and hope its success far exceeded expectations.

5th DISTRICT NOTES FOR OCTOBER.

It is pleasing to note that Reserve members are improving their stations. 5A2 has a new transmitter constructed by 1A1, and is using a much greater power input than previously. He has a very reliable signal down here, but receives our signals only fairly, probably due to a fairly high-level background. 5A3 has now constructed a c.c. transmitter, but requires a crystal for 7317 kc. 5A1 has spent so much time in the Cent. DX contest that he can hardly remember how to sleep. 5Z1 has constructed a 5-metre transceiver, and intends to experiment with 5A1 on 'plane to ground working, at a later date. Should these tests prove unsuccessful, it is intended to try 80 metres, using E/c oscillators. Any advice on this matter from other members in other districts would be much appreciated by 5Z1.

SIXTH DISTRICT NOTES.

6Z1.

One would imagine, from the scarcity of news in these columns, that this district had gone into recess. Such is not the case, though, as Reserve signals have been disturbing the ether in VMF all along; but couldn't push 'em over to VMC to catch these columns all the same, hi!

Listening-in one night on the lower frequencies, the traffic handling by VMB audibly over here was a perfect treat to listen to. It was good, snappy operating. Wish a few of you would transfer to VMF. We are a small scattered gang, and training is difficult, to say the least, owing to unreliable contacting, caused by such things as local interference from trains and skip distances. However, we do our best. Two more prospective members in the metropolitan area have hove up in the horizon, which ought to liven up things a bit.

6A1 has got on the air permanently now, and keeps watch Sundays before commencing duties in "B" Class 6AM. Uses a SE rig, but it is as steady as a rock. When 6A5,

four miles away, can't get broadcasts, owing to local interference, 6A1 relays. 6A3 keeps watch Saturdays, and, as the lower frequencies are useful, 7317 kc has been adopted with success. Although sigs jump from R7 to R2 now and again, it is better than nothing. 6A5 is keen, and it gets one a long way. 6A3 has actually left fone alone, and hitting up hard on the brass-pounding. Keeps watch Sundays and Thursdays like clockwork. He resides close to one of the country landing grounds, and so a useful man in case of emergency.

6A4 may be joining the permanent forces. We would be sorry to see Dave leave us. Althouh he hasn't managed to get on the air up to time of writing these notes, he will be on by the time they are in print, as the xmtr has been completed.

6A2 and 6A6 will probably be transferred to the inactive list.

6ZT is out of town, but keeps watches OK. Got a new rig going, with 59 E.C. oscillator, and those of yon who have such a rig will appreciate the fun changing frequencies until one gets used to it. 6Z1 still alive, and going to put the present rig into a nice frame, after Centenary Contest.

By VK2FX.

We're in a mighty fine old game,
though some don't like it much.
I get a thrill with every dial and
every key I touch.
But it makes me sick to see some
Hams so quick to grab their pen,
And write about some poor Young
Squirt, who caused some QRM.
Now all these blokes who growl and
moan and write in such a way,
Are Lids themselves. Now mark my
words and you'll find out one day.
Remember that this QRM made our
wireless game.
Without a lot of QRM a Ham would
go insane.
It lets you know that other Hams are
on the air as well.
Without these signals on the band,
you'd kick your rig to hell!
So when you hear a Ham whose sig.
is far from being good,
Don't grab your pen. Just stop and
try to use your block of wood.
Give him help in place of all your
cruel, unwanted jeers.
You'll have a friend until your name
in "Silent Keys" appears.

"A HAM ABROAD."

Ex YK, 2NR is now working with STC in England, and glad to be able to settle down. By October he hopes to have his call and be in the Centenary contest—the only drawback being he is only half a mile from 2ZQ's 200 watts. His QRA is c/o Miss Scanlon, 48 St. John's Park, Blackheath, London S.E.3.

Elsum Printing Coy., 124-126 Whitehorse Road, Box Hill.

AMATEUR RADIO

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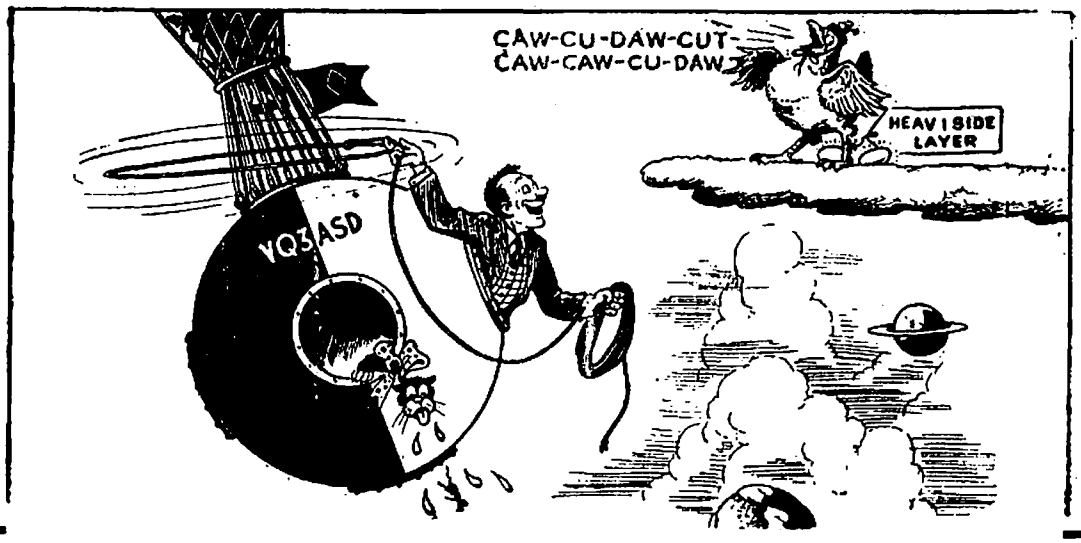
DECEMBER, 1934



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AMATEUR RADIO

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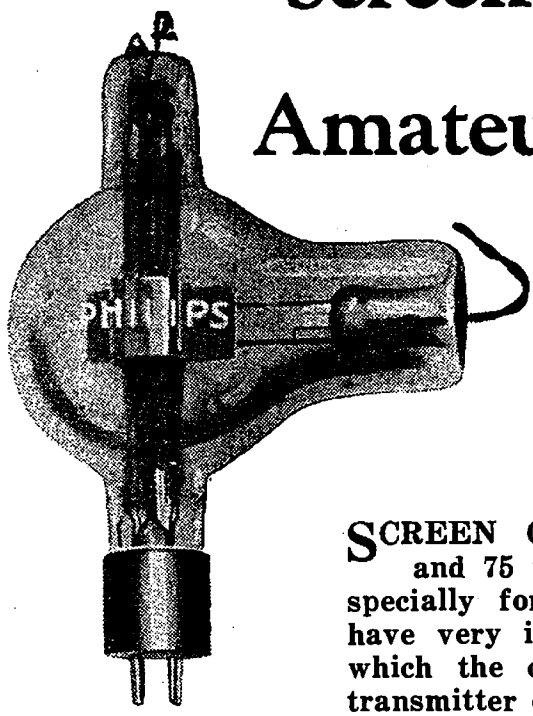
Screen Grid Valves
For
Amateur Transmitters



quarter of actual size

Types: QB2/75, QC05/15

SCREEN GRID Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

CHARACTERISTICS:

Table A. Type.	Screen Grid Valves QC 05/15.	QB 2/75
Filament Voltage	4.0	10.0
Filament current*	1	3.25
Saturation current*	400	2,000
Anode voltage	400-500	2,000
Screen grid voltage	75-125	300-500
Max. anode dissipation	15	75
Anode dissipation on test	20	100
Max. screen grid dissipation	3	15
Amplification factor*	225	200
Mutual conductance (slope)*	1.4	1.4
Int. resistance*	160,000	150,000
Anode-grid capacity	.001	.02
Max. diam. of bulb	50	100
Max length	160	210

*Approximate values.

PHILIPS
TRANSMITTING VALVES

Editorial . . . .

W.I.A. Thanks the World

The thrills and spills of life that we read about could not have been exceeded during those four happy week-ends in October when the W.I.A. placed itself in the fields of international radio contests. We have achieved a big ambition—that is, of putting the W.I.A. on the map. Could any other scheme have placed before the modern ham throughout the world the enthusiasm and activity of us hams down "South"? We say "modern," because not only is the Institute the oldest radio society in the world, but, during the earlier history of international contacts, Australian hams did their share of pioneer work. Those of us who can take our minds back to the days of A2CM, A3BQ, and others who were active in those days, are in a position to realise that the A's of yesteryear set the pace for the VK's of to-day, and made a reputation to be upheld. In the hustle and bustle of life, we set out to place our Continent before the eyes of the world in the merry month of October. Did we succeed? Well, who was the bird that said: "It appeared that every station in the world was on during the contest!" The response to our call to the amateur world was only too well answered, and we can proudly say that the Centenary DX Contest was a tremendous success. In acknowledging the co-operation we received we must offer our heartfelt thanks to our brother societies, contemporary magazines, and to the amateur fraternity the world over. They, and our trophy donors, made the show what it was. We thank you all!

Now 1935!

Christmas will be on us again in a few days, it seems, and that must be followed, as usual, by a New Year. What has 1935 in store for us? Nobody knows what will turn up, but what have we in store for 1935 would be a better question. Looking back over 1934 we have had an international contest, a vast increase of membership, and some experimental work done. We must do better than that next year. Our old friend "Depression" has vanished, and, with the W.I.A. in a wonderfully good position, it is our golden opportunity to become wildly active, and keep on the top rung of the ladder. If we set our minds on a definite aim and object; formulate a one-year plan if you like; we then have something to strive for. The W.I.A. can do its share, and the hams theirs. Our primary object is a 100 per cent. Institute membership throughout Australia. At the present time the W.I.A. is offering more than many members think, but it is going to offer more next year. Surely it is time that amateur radio regulations were reconsidered and brought into line with modern-day practices? With a strongly united body like our W.I.A., we are in a position to speak for the Australian amateur; but wouldn't our weight be much greater if we could speak for 100 per cent. of the licensees? If he wants the air cleared of self-excited signals, poor operating, unnecessary QRM, and all the other bugbears that go to make amateur radio unpleasant, a ham MUST wear the badge of the W.I.A. The advantages and privileges of membership speak for themselves, but, to add to these, we certainly hope that the 1935 Federal Convention in Hobart will produce bigger and better results. If this be so, we will be in a position to go to the P.M.G.'s department with recommendations for the modernising of the regulations. WE use the "regs.," and there is no reason in the world why we cannot make suggestions of additional and amended regulations for the betterment of amateur radio. That is part of OUR plan for 1935; YOUR part is to get the outsider into the fold, because united we stand and divided we may be "knocked back"!

The Mysterious Angle of Radiation

(By courtesy of Westinghouse Electric and Manufacturing Co., through Alan S. Duke Pty. Ltd.)

The amateur has been troubled with many veiled references to the Angle of Elevation of Radiation. He carefully looks over the towering antenna arrays of the commercial radio companies but finds little evidence of any attempt to govern that angle. In fact, all the systems appear to radiate a beam parallel to the earth's surface. He does find, however, an occasional broadcast station using an elaborate system to "cut out the ground wave," and has heard of "landing an aeroplane down an inclined beam." He found out long ago that even if surrounding obstructions did affect his signals in certain directions, as long as there was a bit of clear sky overhead, he was sure to be heard by someone. When he considers the various angles at which the amateur will extend his antenna system, and then listens to their signals, he concludes that all amateurs are capable of sending out "cork-screw" waves that literally "bore" themselves through the ether to the four corners of the earth. He finds one commercial using a "wave" type for transmitting, hung in a vertical plane, and then discovers that the same type of antenna, when used for receiving by this company, is hung in a horizontal plane. There must be some reason for these seemingly arbitrary practices, and a little investigation of what is supposed to happen will not be out of order.

An antenna, either vertical or horizontal, located above the earth's surface is greatly influenced by the earth below. That portion of the power radiated in a direction below the horizontal, is partly absorbed and partly reflected, depending upon the effectiveness of the earth as a reflector. The portion reflected re-enforces the power radiated above the horizontal, and the field pattern in a vertical plane shows stronger radiation at some angle slightly above the horizontal. If the angle is quite definite and well above the horizontal, the ground wave will be small and the antenna is said to radiate at high angles. The supposition is that when the beam is reflected by the Heaviside Layer, it will again strike the earth at a point much closer to the antenna than a beam directed in the horizontal plane. This is true, but consideration must be given to other factors affecting the beam. The beam appears to follow somewhat the curvature of the earth and does not travel in a straight path. Again, when it strikes the Heaviside Layer it may suffer refraction, and be reflected in a path that misses the earth. This seems to be the case of the extremely high frequencies—30 to 60 megacycles. Or it may penetrate the Heaviside Layer and be lost in Cosmic Space.

It might be well, for the benefit of those who are newcomers to amateur radio, to give a short explanation here of the make up of the Heaviside Layer, and its action upon high frequency waves. A theory which seems well borne out by the results of experiments and much data is that the Heaviside Layer consists of two separate ionized strata, the lower of which is almost 100 miles above the earth's surface, and the other about twice this distance. These distances vary with the coming of darkness or daylight, that of the lower layer changing more rapidly than the one above.

The lower layer seems to have the property of reacting in various ways to waves of different lengths. Very long waves, above the broadcast band, are reflected almost perfectly by the lower strata. Intermediate waves which take in the group from 150 to 400 meters, are largely absorbed by the lower strata, thus indicating that those rays which are reflected, and those which pass through the lower, and are reflected by the upper, strata, will give interference, resulting in the well-known fading characteristic and distortion.

Short waves, however, seem to pass through the lower layer easily, are bent somewhat by it, and are reflected by the outer layer, coming back to earth if the reflecting angle is not so great that the earth is missed entirely.

Thus we see that, in the case of a directed transmission of short

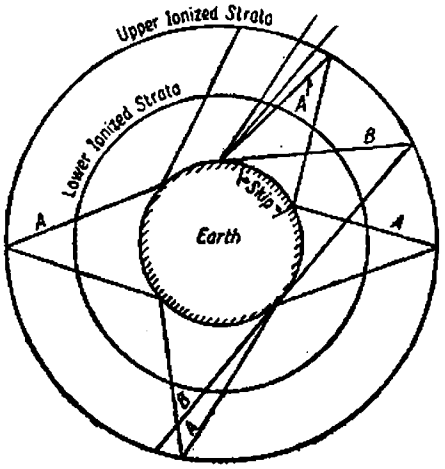


Fig. 1—Apparent Irregularities in Reflection of a Arc Caused by Attenuation or Unevenness of Ionization in Heaviside Layer.

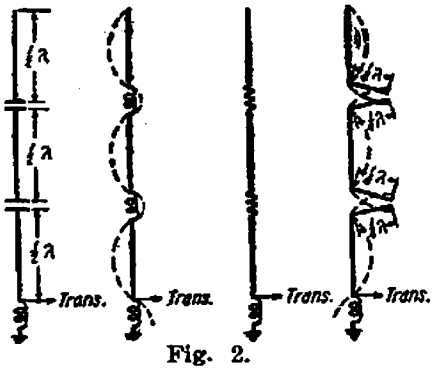


Fig. 2.

waves, the angle of elevation must not be too high, or the rays will shoot directly through both layers. It must not be too low, either, or the angle made by it with the outer strata will be so small that the reflected wave will miss the earth. An angle between 3 and 15 degrees seems to be about right for long distance communication.

Ultra short waves, 10 meters and shorter, seem to poke right through both layers, as a rule. There have been some cases of long distance contacts with these waves, but they seem to be only of short duration, and therefore are the result of freakish conditions in the reflecting layers. It is in this field that the greatest possibilities lie for the amateur to prove again that he can put so-called useless parts of the radio spectrum to work, as he did with the short waves.

Fig. 1 gives an elementary diagram showing a hypothetical conception of the Heaviside Layer, and its probable result upon short waves. The two rays, A and B, are the probable boundaries for the useful rays for long-distance communication. Between these angles, all rays are reflected, and give a blanket effect. Interference between rays reflected from different angles, with different bendings and changes in polarization, due to the passage through, or reflection from, ionized strata, cause fading, and the various peculiarities of received signals, with which short wave fans are familiar.

Experiments seem to indicate that a vertically polarized wave rotates, and will eventually show up as a horizontally-polarized wave. This effect is quite noticeable with frequencies around 56 mega-cycles.

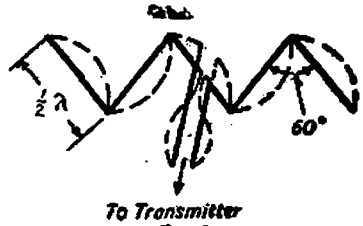


Fig. 3

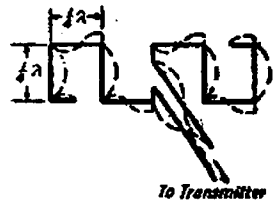


Fig. 4

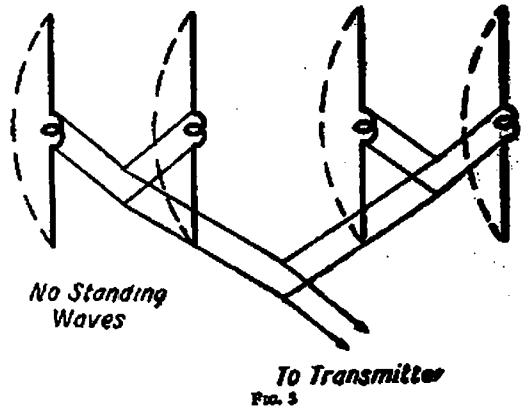


Fig. 5

The amateur receiving such signals often finds that the rotation of his receiving antenna from the vertical to a horizontal plane will cause considerable increase in signal strength. 56 mega-cycle waves often change planes when passing through obstructions such as buildings, the change sometimes taking place within a few feet.

Polarization is a term which has many meanings as applied to light, storage batteries, etc. When applied to radio emanations, it refers to the direction of the magnetic induction. Any radiation of radio frequency produces waves which have a magnetic induction only in one direction, de-

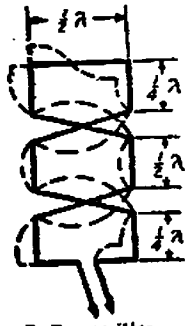


Fig. 6

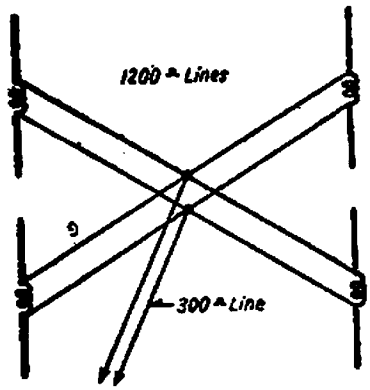


Fig. 7

pending upon the shape and location of the radiator. At right angles to the plane of the electro magnetic field is an electric field, and it is the position of this electric field with reference to the plane of the earth that determines whether the wave is considered as horizontally or vertically polarized.

Thus, a horizontal antenna has its magnetic field in a direction perpendicular to the antenna. At right angles to this is the electric field, which is horizontal. So a horizontal antenna radiates a horizontally polarized wave, and a vertical antenna a vertically polarized wave.

Considerable experimentation has taken place both with vertically and horizontally polarized waves. The greatest efforts have been expended upon the vertically polarized waves, because constructional difficulties limit the scope of the horizontal array. German engineers conducted extended experiments with horizontally polarized waves obtained from a stacked antenna within a parabolic reflector mounted in a horizontal plane. They found that radiation angles from 0 to 20 degrees were best. Subsequent tests over long distances at high frequencies have shown that the optimum radiation of horizontally polarized waves is best when the angle is approximately parallel to the earth's surface. This rather depreciates the importance of high angle of radiation so far as horizontally polarized waves are concerned.

The American and the English engineers also conducted experiments on both horizontally and vertically polarized waves. Their conclusions seemed to indicate that the vertically polarized wave was preferable, and their efforts since then have been directed in this direction.

All the foregoing may lead the amateur to believe that he can obtain best results by sticking to an-

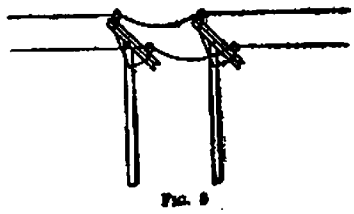
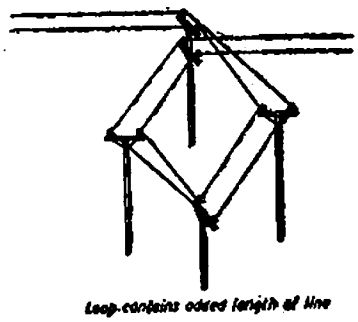


Fig. 8


Loop contains added length of line
Fig. 9

Concentric Tubes
Fig. 10

tennae that radiate at low angles. This is probably not true, since there has been very little work done with the higher frequencies, 40 to 60 mega-cycles, and the belief prevails that there is some way to overcome the quasi-optical effect at these frequencies: It may be the amateur's

good fortune to stumble upon it.

Practically all the large arrays used by the commercial radio companies radiate vertically polarized waves, concentrated in a beam that does not project much above the horizontal path. They have found that concentration of the beam in the vertical plane causes a decided improvement as the frequency in-

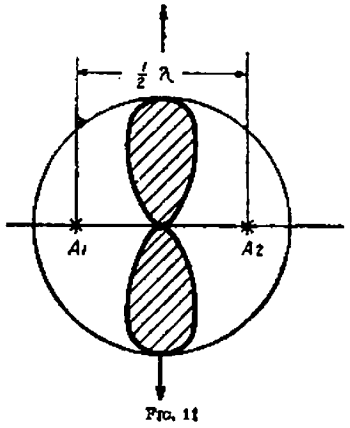
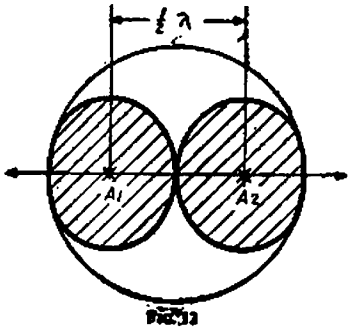


FIG. 11



creases. This effect is noticeable at 6 megacycles, and is quite decided at 20 megacycles. This is to their advantage, since it allows them to standardize on the height of the structures used. Concentration in the vertical plane is accomplished by "stacking" half-wave elements, one above the other, usually starting with two tiers of elements at 6 megacycles, and running to as high as four tiers at 20 megacycles. The Double Zepp and companion antenna systems comprise two tier systems when operated at twice the designed frequency. These antennae were described in the preceding article. Fig. 2 shows several ways in which half-wave elements may be stacked or arranged in tiers. The phase relation of the current in each element is the same.

Concentration of the beam in the horizontal plane is usually accomplished by constructing a row of half-wave elements. Figs. 3, 4, 5 and 6 show several methods of accomplishing this, one being a two tier array. It is customary to erect a reflector system identical to the antenna system, to the rear of the antenna, to cut out the radiation in the undesired direction. This reflector may be parasitic or driven. Fig. 7 shows a symmetrical array, in which each element is fed directly through a transmission line. These lines terminate in the centre, at which point a second line runs to the transmitter. This second line has an impedance equal to one-fourth of the connecting lines. Simply a case of paralleling impedances. If this system is erected on the corners of a square one half wave to the side, and all elements in phase, it produces a clover leaf field in the horizontal plane. In the vertical plane, the field is strongest directly above the array, being about five times the maximum of the horizontal pattern.

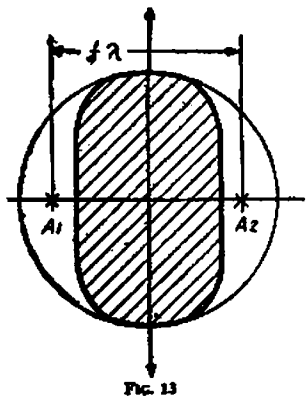


FIG. 13

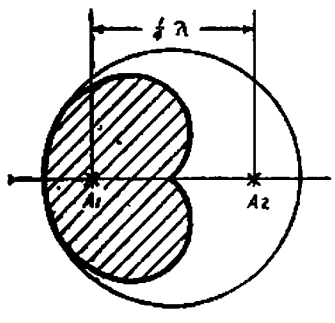


FIG. 14

For causing slight changes in phase relation in different elements in an array, it is customary to insert small loops in the line. Fig. 8 shows such an installation, the added wire being allowed to sag. For causing

large changes, such as one eighth or one-quarter period, larger loops are inserted in the line. Fig. 9 shows such an installation, the added line being supported on posts, and is usually square or hexagonal form. If a concentric tube type of line is used, it may be lengthened by running it snake fashion or in a sort of sine wave path. Fig. 10 shows this method.

By taking advantage of this way of controlling the phase relation of several antennae, the amateur may erect two similar doublets, one half wave apart, excite them through transmission lines, and, by reversing the line in one antenna feed, cause a 90 degree change in the directional characteristics of those antennae. Or he may erect two doublets one quarter wave apart, and by cutting in enough line to cause it to lag one quarter period, cause the system to change from a bi-directional system to a single direction system, at 90 degrees from the original. By shifting the loop to the other antenna, he did cause a complete reversal or 180 degree change in the single direction. Figs. 11, 12, 13, and 14 show the field patterns for these combinations.

The half wave elements may be constructed from the information given in previous articles.

As has been indicated, polarization of waves on 56 mc. seems to change rapidly, due to the effect of obstructions. A portable receiver with a rotatable antenna can be used to make some experiments on this change of polarization. It will be necessary to equip the receiver with a plate current indicator.

A 56 mc. transmitter can be set up with a vertical antenna and field strength readings taken at intervals, or continuously, in any direction from the antenna. Where dead spots occur, try rotating the receiver antenna into a horizontal position. Increase in field strength indicates that the polarization has become horizontal. Further experiments may be made by rotating the antenna at the transmitter into a horizontal position or to any intermediate position. The maximum field of the horizontal antenna will be perpendicular to the antenna, not off the ends.

Apparently ultra short waves exhibit a rolling or stumbling tendency, because often in open places polarization will change, probably due to the effect of some obstacle nearer the transmitter.

This field offers unusual possibilities for the amateur, but it will require organized action to produce results. In the early days of radio, experiments were conducted with waves of 15 meters, but because communication could not be maintained over any appreciable distance they were discarded in favor of long waves, where apparently more reliable contacts could be maintained.

What these early experimenters failed to discover was that, after passing the skip distance, the signals again became evident. This was due to three things, (a) closeness of the experimenters to the equipment, for they were working for fixed point to point communication; (b) lack of the presence in other parts of the world of persons interested in the experiments; and (c) relative insensitivity of the receiving equipment.

Amateurs interested in ultra short wave experiments must organize their efforts, to make sure that they are not wasted, as were the early short wave experiments. Work on these waves cannot be handled in the rough manner used on 7 and 14 mc. Directive effects must be handled precisely. Extreme care must be exercised in construction. Angles of elevation and directions must be properly set. Auxiliary transmitters for regular communication between stations co-operating in experiments are essential, to give quickly results of tests and adjustments.

RSGB Christmas Greetings

"With the approach of the festive season I wish, on behalf of the council and home members of the RSGB, to extend to you and your colleagues our sincerest good wishes for Christmas and the New Year stop may I express the hope that the friendship which binds the amateur movement together will still further extend and that the cordial relations which have always existed between our two organisations will continue for all time stop signed Arthur Watts, G6UN, President RSGB."

The Countryman's Superhet.

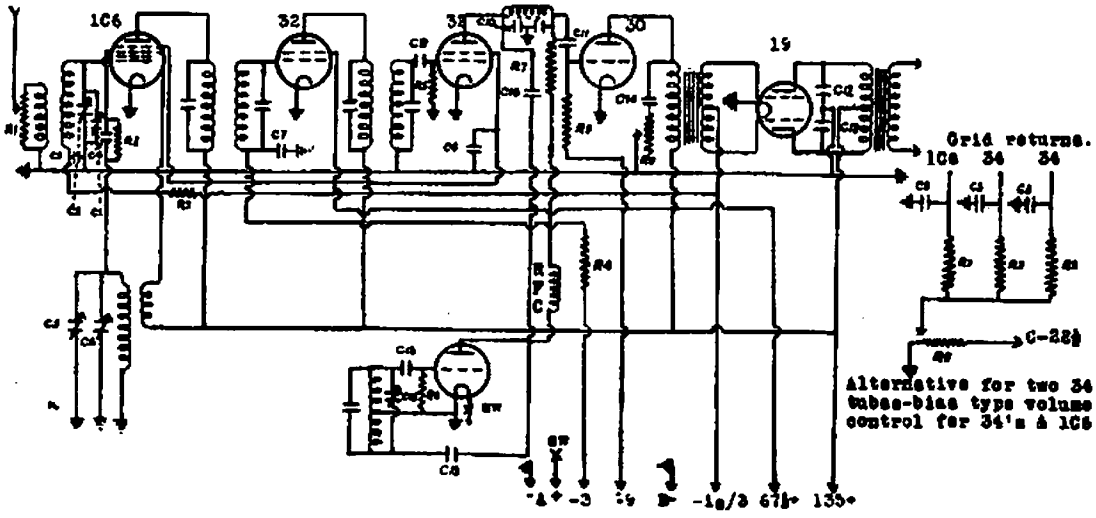
By F. J. Stirk.

Of late we have heard quite a lot about "Single Signal Supers." Now just what are these things? Boiled down, there are straight superhets., using a crystal filter in some cases, and intermediate frequency reaction, to bring up the selectivity, in others. This article was written to cover the description of a small battery superhet. for the country ham who doesn't need signal selectivity. It consists of a straight super., using a pentagrid converter, beat oscillator, and Class B output. The tubes used are as follows:—

1C6 Pentagrid 32, 32, 30, 19, and 30 B/O.

This is not a constructional article, but a descriptive one. The local oscillator, which is combined in the 1C6 (which incidentally is a better tube than the 1A6, the triode portion being very much improved for higher frequencies in the former) is electron coupled to the modulator portion of this tube. The output is fed into a 32 Int. Freq. Amplifier, and then into the 32 second detector. The audio tubes are, of course, the 30 and class B19. The latter tube makes quite a saving in B batteries. If volume can be sacrificed, another intermediate amplifier can be used, and the 1st audio 30 left out. If this suggestion is adopted, 34's are recommended as I.F. amplifiers, and the signal level controlled by a variable bias applied to the grids of same.

The best oscillator employs a 30 tube, and is coupled to the second detector output by a very small condenser; a .0001 mfd. is specified, but smaller than that would be O.K. Volume can be controlled, and also, of course, sensitivity, by a 5000 ohm potentiometer across the aerial coil or by varying the bias on the 1A6, or, if 34's, as I.F. amplifiers are used on them. The coil for the beat oscillator can consist of one side of an I.F. Transformer—treat this carefully, and lift one of the turns of the coil about the middle of the coil, and sol-



C1—5 plate.
C2—23 plate.
C3—0.1 mfd.
C4—0.0001 mfd.
C5—5 plate.
C6—23 plate.
C7—0.1 mfd.
C8—0.5 mfd.
C9—0.0001 mfd.
C10—0.00025 mfd.
C11—0.01 mfd.
C12—0.01 mfd.
C13—0.0001 mfd.
C14—0.03 mfd.
C15 13 plate.
C16—0.0001 mfd. or smaller.
R1—5000 ohm. potentiometer.
R2—10,000 ohms.
R3—50,000 ohms.
R4—10,000 ohms.
R5—2 megohms.
R6—50,000 ohms.
R7—100,000 ohms.
R8—250,000 ohms.
R9—50,000 ohm. potentiometer.
C1—25 mmfd.
C2—75-80 mmfd.
C3—100 mmfd.
C4—0.01 mfd.
C5—40 mmfd.
R1—100,000 ohms.
R2—3000 ohms.
R3—50,000 ohms.
R4—100,000 ohms.
R5—100,000 ohms.
C6—50 mmfd.
C7—0.1 mfd.
C8—0.01 mfd.
C9—0.1 mfd.
SW—3 points.
L1—42 turns of 20 DSC on 1 in. former. Tap 14 turns up.
L2—26 turns of 24 DSC. tap 4 turns 14mc. 12 turns 7 mc.

der the earth wire to it, taking it for granted the winding is a honeycomb wound job. This, of course, tunes to 460 k.c., and the condenser in parallel with the tuning condenser is a midget, for adjustment of the beat note. The I.F. transformers are 460 k.c., and plenty of lift can be obtained if 2 plate trimmers are used on the I.F.'s (some have 3 plate trimmers and some have 2—3 plates have less gain).

A switch is provided in the B/C filament for 'phone reception. If it is decided to use the two audio stages, and only 1 I.F. stage, a jack may be placed in the plate circuit for 'phone, of the 30 audio tube. A speaker that is recommended for this job is an Amplion 01 type Dynamic. It is compact, and altogether very efficient, having a 6 v. field. The coils are standard, and can be wound on formers for plug-in type, or may be put on a long former for switch operation; both are quite good schemes. Suitable lay-outs will suggest themselves to the average ham, and no trouble should be had if everything is carefully shielded. The two 23 plate turning condensers are ganged, and the bands set by them, the band spreading being done by 5 plate midget condensers in parallel with them. The oscillator coils will be found to be the same size as the R.F. coils, because of the low rates of int. freq. to R.F. freq. The 465 k.c. difference will be taken up quite easily by the tuning condensers, so no padding condenser is needed up to about the 3.5 mc. region. Performance should first be checked on the 3.5 mc. band, as it will be found much easier to adjust on the lower frequencies for a start. To line the I.F., a small Hartley Oscillator can be roughly knocked up, unless the B.C.L. set can be used by starting it oscillating on a frequency close to 460 k.c. by putting a small fixed condenser in parallel with the tuning condenser, and final tuning being done by the variable condenser. Coupling should be made to the grid of the I.F. tube first, and when the second I.F. Transformer is lined, the first one can be done, placing the coupling line on the grid of the 1C6. Make sure the triode portion of the 1C6 is oscillating, and then tune in a signal and loosen one of the ganged condensers up and tune for maximum signal strength. If the condensers vary much, a tnrn should be taken off one of the coils, and so lined up approx., like that finer tuning done by the 5-plate condensers. The total current drain of the set is approximately 14 or 15 m.a., depending on the strength of the signal on the 19.

A stage of R.F. ahead of the first detector can be used; but the image reception is fairly low on account of the high I.F. Higher int. freq. may be used; but the gain drops off when anything higher than 500 k.c. is used, although experiments have been made with I.F.'s as large as 1500 k.c. The selectivity, of course, also decreases with the higher I.F. Any reports on this receiver would be welcomed by the writer. Please address to 221 Gale Road, Maroubra, Sydney.

LATE 28 M.C. NEWS.

The conditions existing on Sunday, 24th November, were the most encouraging that have been experienced over the past two or three years. VK4BB was the first to get going, and worked 2HZ and 2NO. Shortly before 10 a.m., he worked ZL1BA, who was also heard by VK4XN.

4XN was coming through at R8 in Melbourne, and worked 3WC, 3OF, 3JJ, 6SA, and heard 2NO, 2HZ, and 7KV. 6SA was heard by 2NO, 3OF, and 3JJ, his signals at the latter being very weak, and fading completely at intervals, but 3OF did better and held him for a considerable time; while QSO, 4BB. 3JO, 3WC, 3HK, 3OF, 3JJ, and 6MN also worked 4BB.

2NO heard K6EUQ, and VU2BL reports hearing a VK3 recently, but these were probably harmonics.

The weather in VK2, 4 and 6, was fine, but in Vic., very stormy and unsettled, with a severe thunder storm during the afternoon.

With these conditions during the past 2 seasons, it would have been possible to work the neighboring states from Vic., but no signals from them could be heard. Evidently the skip is lengthening again, and within a year or so, 28 M.C. dx should be again accomplished.

56 Megacycle Transmitters

By P. F. O'Dwyer (VK3OF).

Few amateurs appear to realise the amazing possibilities of the 5 metre band, and of the things that can be accomplished and are being accomplished on it by the few who are at present located there. Undoubtedly, the fear that their receiver and transmitter will not oscillate without a lot of trouble stops many from migrating to this band, but these fears have been proved groundless because this and all other stations at present working there have found the construction of 5 metre gear to be more than easy. The first investigations on 5 metres in Victoria were carried out by M. S. Israel (VK3ZN) during 1925. His efforts resulted in a contact with VK3BQ during 1926. Interest faded for a while, but peaked up again in 1931, resulting in good work being done and inter-station QSO's between VK3PA, 3GO, 3WL, 3BQ, 3TA and 3JJ. The first outstanding work on 5 metres had been the QSO between VK3JJ and VK3BQ in November, 1931. VK3JJ signals were reported from a number of places, while harmonics from 10 metres were heard for several weeks. And these results were obtained with a series tuned ultra-audion for the transmitter, and straight detector and audio receivers.

Since then vast improvements have been made both in the design of transmitters and receivers, the most notable being the re-introduction of the super-regen. receiving circuit. These receivers, through super-imposing a signal from a low frequency oscillator on the oscillation of the detector, provide a wonderful increase in sensitivity through the production of an audio beat in the phones. Signals that were R2/1 on the detector and audio increasing to R8 on plugging in the quenching valve in the low frequency circuit.

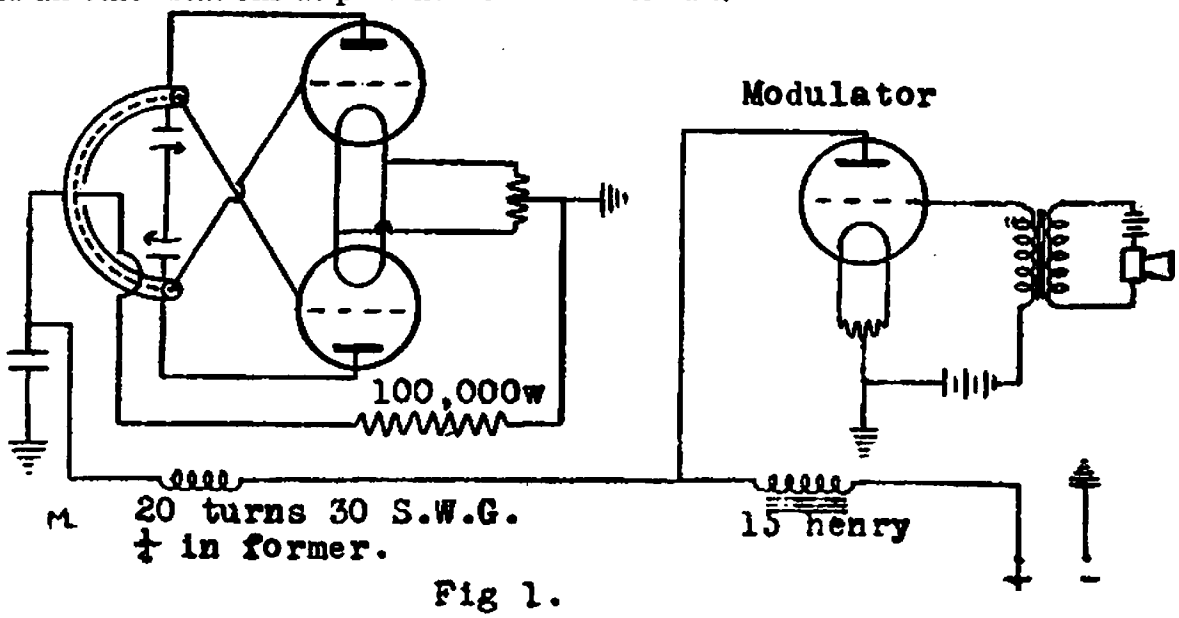


Fig 1.

These receivers have proved themselves the best yet for phone work, giving exceptional results. When oscillating, these receivers produce an R max. mush or continuous hiss in the phone (the audio beat). When an unmodulated carrier is tuned in, if it is strong, absolutely nothing will be heard, while, if it is weak, a considerable decrease in the noise level of the hiss takes place. When the carrier is modulated by phone, the voice stands out with remarkable clarity.

Similarly, in the transmitters more stable circuits have been designed; the T.N.T. especially proving itself adaptable, whilst excellent results have been obtained with the unity-couple, ultra audion and others.

The signals from these transmitters may be modulated in several ways. For phone work the Heising system gives excellent results, being used at VK3OF most of the time.

The construction of a unity-couple push-pull transmitter does not present any great difficulties, and could be constructed by any ham. At VK3OF such a rig works exceedingly well, giving great output on low power.

In the construction of such a unit, proceed as follows: Take an old 49 plate variable condenser and break it down into two sections of 4 fixed and 3 movable plates, all plates being double spaced. The rotor plates are mounted on the common spindle, but the stator sections are insulated from one another by cutting out a section of the mounting support and substituting pieces of bakelite rod. A single turn of quarter-inch copper tube, 3 inch diameter, is bent to connect direct to the stator end and the plates of the valves. To provide the voltage centre tap a hole was bored in the middle of the plate coil, a length of bent copper tube soldered on, and then cut flush with and pushed through a hole in the baseboard. The hole is between the two valve sockets located at the side of the tuning condenser.

Two lengths of insulated flex are pushed through the plate coil from each end, and threaded down through the plate voltage centre-tap, out through the baseboard, and connected together to one end of the grid leak. The other side of grid leak to the filament centre-tap. The ends of the grid coil cross over one another to connect to the opposite grids.

The plate centre-tap is connected through a by-pass condenser to the centre-tap. This by-pass is not always necessary and its absence from the rig at VK3OF results in an increased output. The high tension supply is connected through a R.F.C. to the plate voltage centre-tap. A single turn of copper tube is mounted close to the plate coil to act as the antenna coupling coil. Power, filament and C.T. terminals are brought to a strip at the end of the set.

The modulator is a compact, simple lay-out and should not present any difficulties, comprising of only the microphone, microphone battery and microphone transformer, bias battery, modulator valve and choke coil. These are connected up as in Fig. 2, all leads being brought out to a terminal strip on the side of the side of the set, adjacent to the transmitter. This considerably simplifies the wiring of the power and filament supply. When constructed, if you have had no previous phone experience, try it on the higher bands first, and adjust it to its point of maximum efficiency. Then shift it down to 5 metres.

Different antenna systems may be tried, the one giving best results here being the usual 40 metre antenna, 66 ft. top and 50 ft. feeders, tuned with an 11-plate midget variable condenser. Another method is to connect one side of the antenna to the coupling coil, and on the other side connect a 4 ft. length of wire. Then cut this side till the resonance point is found, or two 4 ft. lengths of wire may be used each side of the coil.

The Pickard type of antenna has been tried here and appears to give excellent results. It comprises an impedance matching transformer connected to two lengths of wire, each 43 in. long. To construct the transformer, take some heavy gauge insulated wire. Commence with ½ in. diameter, and wind at flat spiral of three turns, then take a tap off it. Now wind inwards another three turns, and take another tap off. Now wind outwards again another three turns, again taking off a tap. Connect the two inner taps to the two antenna pieces, and connect the feeders, which may be any length and spaced 2 in. apart, to the two outside taps (see fig. 3). Tie the windings together with string, to keep them firm.

With this rig built, no difficulty should be had in raising another station, even though several miles away. Outdoor or unscreened antennas give by far the best results, although VK3JJ, 3JX and 3OF all have fine QSO's, using indoor aerials.

To show the ease with which transmitters work on this band, most of the work at VK3OF is performed with two totally dissimilar tubes in push pull, namely at UX210 and a UX250. The output with 400 volts on the plate is enough to blow pea-globes in the big antenna, and 6-volt globes in the other systems.

This band is not deserted. VK3JJ, VK3JX and VK3OF are constantly on, using both phone and I.C.W. 3KN, 3RS, 3NQ and 3WG are putting in some excellent work, while 3UJ, 3NY, 3AS and 3ZW are constructing their

gear. It is a revelation to the uninitiated the ease with which phone comes through, the lack of QRM, and the good fellowship that prevails.

This station, VK3OF, is open for sked any time and any requests for advice or for help in locating this band will be welcomed. Become an experimenter and live up to your ticket, and feel the pleasure of having tried something and, above all, of having accomplished something. Well, come, follow us, and feel the greatest of all thrills— that of local DX on 56 megs. Now that the summer is just around the corner, this is the time to start construction.

Radio Personalities

MR. ARTHUR J. VEAL

Mr. Arthur J. Veall has just returned from a visit overseas, and reports that rapid strides have been made in connection with television broadcasting.

He also purchased numerous electrical toys, and states that at least 75 per cent. of the American youth of to-day is educated in the use of electricity.

ALAN S. DUKE PTY. LTD.

The Westinghouse Electric & Manufacturing Co. claim that they can elucidate to amateurs "What's Behind the Dial," and readers are confidently referred to the announcements in this publication of Alan S. Duke Pty. Ltd., which treat of this interesting subject.

MR. HAWORTH

We are pleased to record that Mr. Haworth is back at his desk at Amalgamated Wireless Valve Co. Ltd., Queen-street, fully restored to health after sick leave. This concern forecasts an early importation of a valve to be known as 955, which will reduce the wave length below 5 metres to ½ metre.

International Prefixes

AC—China
AC4—Tibet
AR—Syria
CE—Chile
CM—Cuba
CP—Bolivia
CR4—Cape Verde
CR5—Port Guinea
CR6—Angola
CR7—Mozambique
CR8—Port India
CR9—Macao
CR10—Timor
CT1—Portugal
CT2—Azores
CT3—Madeira
CX—Uruguay
CZ—Monaco
D—Germany
EA—Spain
EA6—Balearic Islands
EA8—Canary Islands
EI—Irish Free State
EL—Liberia
EP or EQ—Persia
ES—Esthonia
ET—Ethiopia
F3—Tahiti, Martinique
F4—Tunis
F8—France
F8M—Morocco
FB8—Reunion Island, Madagascar
FF8—Sahara
FI—Fr. Indo-China
G—Great Britain
GI—North Ireland
HA—Hungary
HB—Switzerland
HC—Ecuador
HH—Hayti
HI—Dominican Rep.
HJ or HK—Colombian Rep.
HP—Panama
HR—Honduras
HS—Siam
HV—Vatican
HZ—Hedjaz
I—Italy and Colonies
J—Japan
K4—Porta Rica Virgin Islands
K5—Canal Zone
K6—Hawaii
K7—Alaska
KA—Philippine Islands
LA—Norway
LU—Argentina
LX—Luxemberg
LY—Lithuania
LZ—Bulgaria
NX—Greenland
NY—Canal Zone
OA—Peru
OB—Sarawak
OE—Austria
OH—Finland
OK—Czechoslovakia
OM—Guam
ON—Belgium
OZ—Denmark
PA—Netherlands
PJ—Curacao
PK—Dutch East Indies
PY—Brazil
PZ—Surinam
RY—Lithuania
SM—Sweden
SP—Poland
ST—Sudan
SU—Egypt
SV—Greece
TA—Turkey
TF—Iceland
TG—Guatemala
TI—Costa Rica
TS—Saar
U—U.S.S.R.
V8—Mauritius
VE—Canada
VK—Australia
VK9—British New Guinea
VO—Newfoundland
VPI—Ellice Islands, Fiji Islands.
VP3—Malta
VP4—British Honduras, Trinidad.
VP5—Jamaica
VP6—Barbados
VP7—Bahamas
VP9—Bermuda
VQ1—Fanning Island
VQ2—North Rhodesia
VQR—Tanganyika
VQ4—Kenga
VQ5—Ugamda
VR—British Guiana, Mauritius
VS1, VS2, VS3—Malaya
VS6—Hong Kong
VS7—Ceylon
VU—India
VU1—Bahrein Islands (Persian Gulf)
VU3—Andaman Island
W—U.S.A.
X—Mexico
XU—China
YA—Afghanistan
Y1—Iraq
YJ—New Hebrides

QSL Bureau

Cards are on hand at the Victorian Bureau, 23 Landale Street, Box Hill, for the undermentioned stations, and will be forwarded on receipt of the necessary postage:—

3AT, AY, CK, CL, CM, DQ, ES, ET, EW, FG, GC, GE, GW, GX, GY, JG, JR, JN, JK, KM, KQ, LD, LP, LT, MS, NR, NG, OP, OY, OZ, PW, PZ, QZ, RQ, RS, RT, RW, TY, VL, VU, WC, WD, WX, WZ, WN, XP, XQ, YA, ZJ, ZK, Messrs. Hecker, Bennett, Carey, Nihill, Nye.

Stations are again reminded that this bureau returns unclaimed all cards not collected within six months from date of receipt.

K6BAZ informs VK8GQ that he (K6BAZ) is "trying to down his non-qsling reputation." May be sincere, may be not, but deeds speak louder than words, and no cards yet to hand. VK has some offenders just as bad as K6BAZ and FM8IH. Play the game, VK's, and qsl if you say you will, and have enough backbone to tell the other chap if you don't intend doing so.

VK must be over the "depression." The number of outward cards exceeded the inward total, during November. This is the first occasion such a happening has occurred since 1931!

The roll of WAC stations in VK should swell considerably if the CX at present accommodating VK's on 14MC sends along his card.

YL—Latvia
YM—Danzig
YN—Nicaragua
YO, YP, YQ or YR—Roumania
YS—Salvador
YT or YU—Jugoslavia
YV—Venezuela
ZA—Albania
ZC1—Transjordania
ZC6—Palestine
ZD—Nigeria
ZE1—Southern Rhodesia
ZK—Cook Islands
ZL—New Zealand
ZM—British Samoa
ZP—Paraguay
ZS, ZT, ZU—Union of South Africa

Unofficial:

CN8—Morocco
FM4—Tunis
FM8—Morocco

Federal Headquarter Notes

By G. B. Ragless, Fed. P.O.

The Federal Executive have decided that the 11th Annual Convention will be held during January 26, 27, 28, 1935, and all Divisions are invited to submit items for the agenda. Divisional Councils are asked to call a special general meeting, and obtain the views of their members, and place them on the agenda. This list of motions must clearly indicate the way the Division placing the item on the agenda wishes action to be taken, or the direction it is prepared to move a motion, and must reach the Federal Secretary by December 25. When Federal Executive have received all the items for discussion from the various States, an agenda will be made up and sent to each Division early in the New Year. The Divisional Councils, on receipt of this agenda, will then discuss all the items and direct their delegate regarding his action. All members of the Institute are asked to take part in the preparation of the agenda, and bring under the notice of their Divisional Council all matters they think should be attended to. The A.R.A. of New South Wales, who have paid per capita fees since they have been affiliated with the Institute, have been invited to take part on the same footing as a Division, and we hope to see a delegate representing them. All Divisional Councils are asked to give the Convention their earnest attention, as many subjects have to be discussed which will have a far-reaching effect on the future of the Institute.

Federal Executive again wish to remind Divisional Councils that the new Membership Certificates are available at a small nominal cost, and would like to suggest that they be issued to all financial members.

Mr. Harry Roberts, VK5MY, recently submitted cards for W.A.C. Certificate, which were found to be in order, and receives the congratulations of all members. The Federal Executive wish to offer the season's greetings to the Councils and members of all Divisions, and hope that 1935 will be another year of progress and success for the Institute in every State.

FISK TROPHY COMPETITION.

INDIVIDUAL PRIZES.

Federal executive have decided to present two prizes for the two best individual scores by competitors in the 6 point relay contest to take place just before Christmas. We still desire each Division to present a prize for the best score in their State, and suggest that this be given to the second highest score in the case of the State having a Federal prize-winner in its ranks. The rules of this contest appeared in the last issue of "Amateur Radio," and as it is the third leg of the competition considerable activity is expected.

All stations are asked to take part in the Contest, and make it better than the previous relay contests held in Australia.

Divisional Notes

A.R.A. MONTHLY MEETING.

By 2HZ.

The usual monthly meeting of the A.R.A. was held at the Y.M.C.A. on November 15.

The new W.I.A. membership Certificate was on show, and it was decided to send one to each member.

The Agenda for the next Federal Convention was discussed, and some suitable points noted for inclusion. 2HZ was elected A.R.A. representative to the next Federal Convention to be held on January 26, 27, and 28.

The new R.S.T. (reporting) system from QST was debated, some supporting, others expressing the opinion that it was an unnecessary change, as the present system covered QRK very well.

2ER concluded the meeting with a talk on his transmitter, and special features, and, judging from the lecture, it certainly has some.

The Vice-President, VK2VG, occupied the chair, as 2UX, the President, is away on business

NOTES FROM ABROAD.

By X VK2NR.

(It's not Jack's fault that there were no notes last month—the fault is 2YC's, alas!)

I went to the R.S.G.B. Convention, and met all the gang; in fact, I met so many I've got most of the calls mixed up. I remember G2YL, however. Hi. Also ON4AU, VP7AA, G5ML, G2QA, G5HI. Altogether it was a wonderful evening, the only drawback being my inability to draw any of the 40 prizes offered by the various radio firms.

Owing to my future being very indefinite, there is little likelihood of me getting a G call, and most of my Ham work will be done from G2ZQ, whose decency and good fellowship to me have made things very much easier. At present he and G5YH are on holidays in Poland. 2ZQ is to start work with the B.B.C. after holidays, so his Ham future is a bit indefinite.

I tried to get an FBXA from U.S.A., but a landing duty of £20 made me change my mind. Hi.

As it is impossible to write to all my Ham friends, I take this opportunity of sending them my 73's.

CENTENARY CONTEST ORGANISATION.

A hearty vote of thanks is due to those VK8's responsible for the origin and ground work done in our recent DX contest. All we can say, as a form of thanks and sign of our approval of their efforts, is "Please repeat the dose next year."

A.R.A. WEEK-END CAMP.

By VK2HZ.

On November 10 and 11 the A.R.A. held its first week-end camp at Mona Vale, twenty miles out of Sydney. The event was a success, some 30 being present at the peak.

Bob Power, 2DR, 2YA, 4OB, and 2HZ were the advance party, and went down on Friday, spending Saturday morning installing the transmitter in the local garage so as to utilise A.C. for the supply. This consisted of a 47 CO on 40 mx and 46 PA. The transmitter was soon in operation, and all States excepting VK6 were QSOed.

Throughout the day the campers drifted down, and later 2KA and 2VG arrived with a portable Hartley, which was installed in the camp and operated from "B" Batt.

Saturday afternoon was spent by most playing cricket, or playing about with radio gear. 2DR brought a portable 80 mx. loop receiver, which has a nice range. This could also be used as a transmitter.

On Saturday evening some of the gang attended the local dance, while others just made a row. Practically everybody was in bed by midnight, and by 12.30 a.m. everyone was up again, the tents losing elevation three times during that time—from then on it was more or less an open go, every "Ham" for himself. 4 a.m. saw the end of any attempts to sleep, and practically everyone turned out, either for a swim or for cricket.

Up till 10 a.m. a few more visitors arrived, including 2HI, 2PV, 2VQ, 2SS, Harry Whytemeach, 2LZ, 2YC, 2BJ, 2TX, and Miss Baker, 2FF, and others.

All the catering arrangements were supplied in the hall by the local refreshment rooms.

In the afternoon 2VG-2KA transmitter was located at Narrabeen, and the camp station XVK2WI was worked. Amongst the high lights were Andy, 2AX birth to a tick—2DR's swollen nose, and consequently his treatise on wicket-keeping, also his mania for tent demolishing; 2XT's intermittent snoring and laughing; 2EL's unconscious look the morning after; 2YA and 2BS's marked absence on Saturday night from the camp; 4OB and Bob Power's sleep at 5 a.m. on Sunday; Bill Clives and 2HZ's jaunt to Narrabeen for sleep; AND amongst the startling discoveries were that—Motor-bike spark plugs don't need 1/8 in. gap; that tents won't stay up without ropes; and, finally, that camping is not all it is cracked up to be with 2DR, 2EL, and others about.

Amongst those present were: 4OB, Bob Power, 2YA, 2DR, Bill Clive, Harry Whytemeach, 2VQ, 2YC, 2SS, 2HI, 2KA, 2PV, 2VG, 2BP, 2TX, 2XT (all the way from Newcastle), 2AX, 2BS, 2EL, 2BJ, 2LZ, 2HZ, 2DA and Mrs. 2DA, 2DR second op., 2JH, 2AG, 2ZV, and Ron Hands, and others.

NORTH SHORE ZONE.

ZO—VK2DR.

Well, here we are again! Another month gone by, DX contest and A.R.A. camp over, and things getting back to normal again. Many and varied were the fish-yarns in circulation at the A.R.A. general meeting last night re doings in the test. Everyone appears to have had a good time. Pity there's not enough 852's to go round, though! Condx

during the month have been good on 40 mx and NSG on 80. Europeans are easily QSOed on 40, especially in the early a.m. Sa, who didn't work VQ4CRL during the contest? He certainly pumped an fb sig. across, and was kept very busy with eager VK's. QRN is the trub. up on 80, of course. When the QRN eased up on one or two nights, condx were FB. ZL's could be worked on phone easily. So much for condx.

Now for the local gossip. Young Dave, 2AE, managed to scrape in a South American, and made his WAC during the contest. FB OM. What if 'e doesn't QSL, Dave? 2AE was very consistent in the test, his CQ's being heard at some unearthly hours of the night. 2BJ rolled along to the A.R.A. camp. Keith finds the 46's FB. Don't we all? 2HL has been active. Haven't heard from 2HY since the contest. Roy's probably still asleep! (Hi.) 2HZ has big bottle in final, and has been keeping me company with the early morn. DX. Jack, of 2JH, was also present at the A.R.A. camp, and shook no mean festive toe at the local dance on the Saturday night. 2KA, 2EL, and 2VG brought an fb lil xmitter to camp, and did some good work with a watt or so, and say, can't Eric (2EL) climb trees! 2NP was the first to contact the A.R.A. field xmitter, and chewed the rag for some time. 2WW hooked with 2KA's outfit. Ian (2XC) couldn't get along to the camp owing to studies. We missed you, OM.

Now, amongst the Manly chappies: 2BS has been getting amongst the European DX. G, GA, etc., falling for his carefully baited CQ's. 2AX is in the throes of rebuilding. Andy's new rig will have an input of about 25 watts. Heard that one before, OM, but I didn't hear the one about the Three Bears! (Hi.) 2QK has also been amongst the DX with his 46's in pp. K5 and good old VQ4CRL were included in the bag. Hear that 2QF is QYL but active. What a man! What's your secret, George? 2QF has no trouble in obtaining QSO's without that magic symbol CQ. Pity a few more of us don't do the same. 2WQ is rebuilding through heavy QRM from work and YL. Bob can handle the situation, though. 2FF is a new ham in Dee-Why, and is using 46's. Let's hear from you, Frank. 2CE at Harbord is QRL work. 2DA put all available time into the contest and got amongst the DX without any tronble. Harry and Mrs. 2DA visited us each day at the camp.

Well, here's the Mosman notes from 2XC again: The event of the year is over—our own DX contest has been and gone, and what a success! Main impression was one of DX galore, and QRM! Seemed as if every ham in Australia was on, but the number of VK's with T9 sigs. reflects great credit on the gang, and, judging by some of the comments from DX stations, we have established an excellent reputation abroad. Anyway, who doesn't want another such contest? It was such great fun that I sincerely hope it becomes an annual event. Here's hoping. The most successful North Shore station was Con (2LZ), who knocked up an excellent score by working Europeans hand over fist.

2DA concentrated more on the Yanks on 7 m.c., and went through them like . . . like anything!

2HZ's business kept him from getting on much during the contest, but he made up for it in between the week-ends. He has now settled down to a permanent transmitter, which uses a large bottle in the final and pushes a hefty sig over to Europe in the mornings on 7 m.c. The Mosman gang have been very quiet this month—only 2XC and 2FM being on at infrequent intervals during the tests.

2HI is still QRL building a super, and is rarely heard on the air.

2FM has established a reputation for himself by being able to burn out a torch bulb in his inside receiving antenna when the transmitter is on, absorption plus! 2PV and 2XC are both QRL, uni. exams, but hope to make up for lost time during vacation. That's the lot from Mosman this month. Thanks vy Ian OM., you're a cobber. Well, there's no doubt the A.R.A. camp was fb, despite the fact that numbers present were not up to expectations. We all learnt that Bill (2HZ) "doesn't muck about and never did," and that the ground isn't so jolly soft to lie on as it was when we were in the Boy Scouts! Eric (2EL) is no new hand at the art of collapsing tents, and Rex (2YA) very nearly had the unique experience of taking off in his newly-acquired car with a strong rope anchoring it to ground (hi). News has filtered through that there's been some dirty doings in VK5. Ask 5FM about the fuse and the bag of flour containing a star bomb! (Hi.) Well, that's about the lot this month, chaps—not much, I'll admit. Too bad!

LAKEMBA RADIO CLUB NOTES.

(Affiliated with A.R.A., N.S.W.)

The meetings of the Club are held every second Tuesday at the clubrooms, 79 Park Street, Canterbury. During the past few months lectures of general interest have been given: "Aeronautics," by 2XZ; "Mining in Broken Hill," by 2EH; and "Radio in North Australia," by F. Carey (ex VJB), proved of great interest.

The transmitting members of the Club are as follow:—2LR, 2AT, 2CY, 2DL, 2ED, 2EH, 2EV, 2FD, 2GZ, 2HE, 2IC, 2JT, 2LS, 2NJ, 2OV, 2OD, 2PX, 2QP, 2QX, 2SK, 2VY, 2WF, 2XD, 2XM, 2XW, 2XZ, and F. Carey (ex VJB, North Australia).

The club's official paper, "Lakemba Review," is progressing beyond expectations. This paper is on sale for members each club night, and every issue is unanimously subscribed to.

MEMBERS' DOINGS.

2PX has an FB location up in the Bankstown Bush. Works most of his DX in the early morns. 2SK just completed a new rig. Excellent piece of work. Perks FB. 2OD, now WAC. Tom works plenty of DX with his MOPA and semi-vertical aerial fed at the high end. 2XW—not on much now. QRL with his new motor bike. 2EV overcomes the local QRM with his S.S. Super. 2FD has built his rig on plate glass. Looks and perks FB. Bill Picknell at present up at Inverell. Bill still goes crook if anybody mentions field days. 2XZ about to rebuild and should have an FB rig by the time these notes appear. Dick is chasing Africa for WAC.

ZONE 7 NOTES

ZO—VK2FI.

Old man static has been running wild of late, consequently 80 mx is practically deserted. 2JQ, of Moruya, has not been on the air much for some time, but expects to begin chasing DX again soon with a new 50-foot mast. Has been experimenting with battery broadcast superhets, and praises the 1A6 tube. 2PN says he is active, but I can't hear him. 2GT has been QYL so long that he has forgotten how a key works. S'prised at you, George! Rumor has it that old Harry, of 2YI, might be back at Girral with 2FI again soon. 2FI playing with a new engine, and burning-out generators by the score. Has a new receiver using 78, 77, and 37 tubes, which

perks very nicely. Owing to harvesting operations, too, QRL to collect any further dope this month, but hope to do better next time.

ZONE 8 NOTES.

A.R.A. (N.S.W.)

ZO—VK2OJ.

Now that the contest is over, there is a noticeable absence of the more active stations on the air. Suppose they are getting some of the shut-eye which they missed. BAD luck came 3EG's way, as a few days before the final week-end his aerial was caught by lightning and completely ruined his transmitter. Coils were melted together, valves shattered—the whole outfit in a mess. That's what Ivan found when he returned from a few days at Corryong. It was tough luck; but rather lucky that you were not in the shack when it happened, OM. Now rebuilding and methinks a pair of DE T1's (or what?) in PP, will be working overtime very soon.

Conditions for the first two contest week-ends were very good. During the third, hours were spent trying to hear VK's through QRN. Improved for the last; but has been one mass of QRN ever since. 3GQ and 2XU seemed to monopolise DX, and their scores must be very near, if not winners. Good luck, OM's. 2QE now going MOPA. A good steady Zone, HR, all MOPA. Hi. During the coming Inter-Zone Relay Zone 8 will most likely be represented by 2QE and 2OJ, if not too QRL. 2YI cured that RAC by replacing the 45 by a 210 in the oscillator. Note now T9.

ZONE 10a (MAROUBRA).

A.R.A. (N.S.W.)

ZO—VK2XV.

The outstanding event of the month, of course, has been the Tests—and what a time we had! DX galore, and plenty for everybody.

Conditions were very fb for every week-end on one of the bands, at least. 2XV was the only station active right through the tests out this way, although 2WJ and 2XK started up on the last week-end. Several new countries were worked, and we are keenly anticipating a test of a similar nature next year. What say, everybody else? 2FQ hasn't been very active this month; been very busy with BCL sets. What about the chap that wouldn't part up with the 16/- for the 247, Jack? Hi.

2WJ still pumps out good phone on 14 m.c. and holds council with 2XF, 2XV, and 2FQ practically every night of the week. It's a pity more Hams can't get down to the higher frequencies; it's the berries. The very uncertainty of it is tantalising. 2XV and 2FQ had an R8 QSO both ends, with K6BAZ at about 2030 one night, and about a week later 2WJ and 2XV were QSO CX1C at about 2000 hours. It's really fb down there. 2XK with his semi-QRP rig seems to get out just as well as his high power rig neighbors, and works plenty of DX.

VK2SA has been on regularly lately, staging a come-back together with 2CD, and 2NO has been heard down there testing. The latest news we hear is that 2XU has decided against coming to Maroubra to camp. Hi.

If anybody round Eastern Suburbs way would like to give me some notes, I will be pleased to include them in this short news gathering. Please get in touch with 2XV, either on 14 m.c. or 7 m.c.

14 m.c. has been remarkable during the past month. Europeans such as T, F, PA, D, OK, SM, VU, OH, ON, together with K6, CX, AC, J, PK, VS, OM, W, etc., all being worked this month. ZS1H is also appearing on Sunday afternoons approximately 1500 SMT.

KEY SECTION NOTES.

ZO—VK3PX.

The monthly meeting of the Key Section was held in the W.I.A. rooms in Law Court Chambers, on Wednesday, November 7. Due no doubt to the wet weather, and possibly to some extent to the arduous round of Convention activities during the previous week, the attendance was rather poor. After QSL cards had been distributed by VK3RJ, general business was dealt with. Owing to the unavoidable absence of several members of the debating teams, it was decided to postpone the debate until the next meeting. At the conclusion of general business, Mr. Max Howden (VK3BQ) gave a talk on some experiments he had made recently with Tritet crystal oscillators. This was most interesting, and it was a pity that it could not have been given at a better attended meeting. Now that the DX contest is over, activity on all bands is rather limited, but a fair number of the boys appear to be making preparations for the ten-meter contest. Amongst these are VK3JJ and VK3JO. The latter has now to put up with another Ham in the shack, as VK7OJ has come back after 19 months in Tasmania. VK3OX is also rebuilding gear for the 28MC contest, and has at last overcome the key clicks on 40. VK3DP is trying early morning DX, and hopes to work some of those rare Africans to WAC. VK3FY is testing the oscillator of his new MOPA rig, and hopes to have it going soon. VK3TY wants to know if ZU5BJ QSL's, and would also like BCL reports on his phone and QSO's on 28MC and 7MC on Sundays. VK3CS is on 7MC with a 210 in a Hartley. VK3KC would like reports from anyone hearing his portable rig. QSO's are hard to get with .1 of a watt. VK3PX had some bad luck recently, when about a fiver's worth of gear was stolen from his shack. As this included the RF part of the transmitter, he was not able to rebuild in time for the contest, but he will be on again in a week or two if all goes well.

History was made at a recent camp of the Signallers of the Victorian Scottish Regiment at Hall's Gap, Grampians, under the command of Capt. R. Dunt, when contact was made between 3RH under an Air Force Wireless Telegraph Reserve call and 3WQ under a Military call of the V.S.R., over an airline distance of about 45 miles.

This marks the first contact between the R.A.A.F.W.R. and the Army.

The set used by 3RH was his usual X-tal rig, and the one by 3WQ was an 89 in an electron coupled circuit built by 3WQ, and had an input of .8 of a watt when R7-R3 (QSB) was obtained under bad screening from hills, etc.; the wave-lengths used were 69.95 meters and 78.17 meters.

The signal was, strange to say, rock steady, although the transmitter was subject to vibration during sending, so this speaks well for the electron coupled circuit.

3WQ wishes to thank 3RH on behalf of the Signallers, for all the very FB assistance which he gave them, and also for the loan of the motor generator which was used in a later test when R7-R5 was obtained.

We also wish to thank 3WG for the loan of a receiver, which we understand caused him the loss of a few hours' beauty sleep, to build up, and we can assure him that it was "the goods."

As we go to press, the following points have been scored in the International 28 m.c. Contest:—

VK4BB, 32; VK3HK, 10; VK3JJ, 10; VK2LZ, 6; VK2HY, 6.

MALLEE NOTES.

By VK3WE.

Doings of the Mallee gang over past few weeks have been rather spasmodic. Old man QRN has curtailed activities on all bands, and particularly on 3500 k.c. Work on this band after sunset has been well nigh impossible on most nights, though a few die-hards, with little regard for their ear-drums, seem to keep going. In the early evenings ZL's and W's are still heard. The "chain" gang (3's CE, WN, ZK, EP, PY, PW, and WE) still continue Sunday morning and afternoon schedules, but algs. and quality have deteriorated, mainly due to conditions, which vary almost from "over" to "over." Aside from entertaining (?), the B.C.L.'s on the publicity band 3CH and 3LH have confined their activities to amplifiers and public address systems. They ran the P.A. system at Donald for the visit of the Duke of Gloucester, and Alf was tickled to bits when H.R.H. spoke over his mike. It is noticeable that although 3CH could (or would) not be convinced that his condenser mike was inferior to a X-tal mike, he has now installed one of the latter. The three Birchip stations, 3's LH, CH, and WE, now possess X-tal mikes. Owing to previously mentioned QRN, and local QRM, 3WE has only rolled up about 40 QSO's for the month. Outstanding in QRP sigs. worked was 2TM, who uses 233CO, 233PA Telefunken modulation, with 280 and 130 volts "B" batts. Q5R6 here on phone, too. 5QR, the croweater QRP merchant, came to light again, this time from Jabrek — don't know where that is, but Reg says quite a few miles from a pub. Other fb sigs. here include 5LC, 2XD, 7CK (Poley must have plenty of water for the wheel now), 5FM, 2HIJ, 3PY, between intervals of X-tal grinding, curses local power supply, but is now building an auto-transformer to cut out varying local voltage trouble. 3ZL, the Ballarat Telefunken expert, has joined the ranks of the Benedicts. Y.F. already on the mike—get 'em young (or early) and train 'em. I should have started earlier. Hi. Nothing much heard on 40 or 20 here, though overseas and local B.C. S.W. stations coming in well.

SHORT WAVE NOTES.

ZO—VK3XJ.

Considerable interest is being taken by the German broadcasting authorities in the graphs compiled from observations on the German short wave stations, made by members of this group during 1933.

The group is making further observations on the special Australian transmissions which commence on December 1, 1934, daily from 6.45 p.m. to 10 p.m. Eastern Aust. standard time, through DJB on 19.73 m. and DJD on 25.51 m.

Any reader who is interested in the compilation of these graphs is requested to communicate with the Secretary, VK3XJ, Newstead Street, Maribyrnong, who will be pleased to forward report sheets and any information they desire.

Our last meeting was well attended, and Mr. Ron Higginbotham delivered an interesting paper on "Whistles in Superheterodynes."

On December 19 this group is undertaking frequency measurements on overseas broadcasting stations, which should prove valuable to members generally.

A syllabus of lectures is being drawn up and will be published with the January notes. Gang, have your lectures ready in time.

WESTERN DISTRICT NOTES.

3QW-3HG.

With the big contest over, DX is not quite so plentiful now, although a few stations are coming through on 20 mx.

The contest proved that conditions are quite suitable for DX, if only the stations would get on the job more.

3PG put up a fine performance in working 9 countries with 2 watts.

A couple of South Americans—CX and CE—are coming through on 20 mx and working VK, but are seldom audible here! 3HG was fortunate enough to contact CX1CG the first time he heard him.

3JE in Coleraine has built up a 3-stage rig, using tri-tet C.O., and gets half amp. in feeders on 20 mx, using the 230 volt D.C. mains. Bill doesn't like the extra pure T9 sig. given by the D.C. (hi!), and is designing a transformer to enable him to use a 24 volt 25 cycle converter to power his transmitter. Guess this will give the required ripple to the sig.

News seems scarce this month, so 73 boys. Please send along any news you have.

VK4 (QUEENSLAND DIVISION).

By VK4RY.

The monthly meeting of the Wireless Institute (Queensland Division) was held at headquarters, Heindorff House, Queen Street, Brisbane, on Friday, November 2, before a fair attendance of members.

Mr. P. Kelly reported to members the activities of the T.D. Section. Quite a lot of good work has been done by this section, and at present the construction of a 56 m.c. transmitter and receiver is well under way.

The student classes continue to receive good support, and intending students wishing to join up should get in touch with the Secretary, Box 1524V, G.P.O., Brisbane.

Conditions during the recent Centenary Test were nothing wonderful in VIB; however, all the boys were out to gain as many points as possible, and each week-end one could hear plenty of CQ DX "cent" calls.

4GK, 4US, 4UU, 4EI—all members of this Division—seemed to be doing well, and no doubt knocked up some decent scores. 4WT has been QRL lately, building a new power transformer; also turning out some fb. Bug keys. Bill also intends making something out of the box in the way of X-tal holders; no doubt more will be heard later. 4GU receiving some good reports on his phone from Z.L.; also has now one of the finest shacks to be seen up this way. 4TS has now become interested in a motor boat; daresay some portable gear will find its way on board shortly. 4JB recently landed two South Americans (LU and CX) on 14 m.c., but states conditions very patchy on this band. Ock is still looking for South Africa for his W.B.E., W.A.C. 4UK, of Toowoomba, is now residing in VIB, having been transferred to this part. Hope you find the DX as good here OM.

4UZ, a new country member, has just completed his Xtl rig, which comprises 47CO, 46 Dub, pair 46's in parallel as p.a., and reports indicate that all is well. 4JF and 4ZX have not been heard so much lately. Wot's the trouble, boys? 4WD still continue to put out a hefty sig., and is now waiting for an African to complete his W.A.C. 4JM has been trying out his new rig—59 electron-coupled osc., 46 dub. and pair 46 p.p. final. Jim is not satisfied with his QRI and a X-tal has now been ordered.

4MC is still on QRP, but will soon be heard QRO on his new X-tal rig, which is nearing completion.

4AW finds that R.A.A.F. reserve skeds keep him busy, also his Morris car, which by the way seems to be working overtime lately.

4HB and 4HL not very active of late.

A letter received recently from W6AMC—Norman Isherwood, Oakland, Calif. He wishes me to inform all Hams visiting U.S.A. to be sure and call on him. He has plenty of room at his QRA, and a hearty welcome awaits all.

Well, boys, all this time. My best wishes for a Merry Christmas and a Prosperous New Year.

SOUTH AUSTRALIA (VK5).

By ERIC HALLIDAY.

With the rush of the now famous Centenary Contest over, things in South Australia are getting back to normal again. Several of the Hams have decided to take a holiday from radio until the New Year. Evidently the strain of the contest proved too great for them. Hi. (Don't forget the Fisk Trophy, OM's —Ed.) Conditions are now getting back to ordinary midsummer dx. 80 m. is slowly dying out, and on 40 m. there is quite a bit doing at times. Several of the local Hams have been hearing a South American, who has been on fairly regularly on the 40 m. band. As soon as he is heard, one can hear all the local chaps calling him for all they are worth. Up to date 5GW has been the only one to work him.

5MY worked his second South American during the contest. Fb on. 5RP still entertains the BCL's on 200 m. Bob is building up a new rig for 40 m. in a frame. 5SU is back from a holiday in VIM. Brought back some big rectifiers under his arm, too.

5LJ is still playing around with radio. By the way OM, you want to go easy with that silverfrost another time. 5BT has presented his single sig super to the Technical Development Section. Your gift will most certainly be appreciated, OM.

5FM is rebuilding his rig. Hopes to make a bit of noise directly with a couple of big tubes. 5MD burnt out his power tranny the other day. Bad luck, Doc.! Still makes music on the 200 m. bond. 5NR and 5BY also take their shares in entertaining the BCL's. 5WR still works DX occasionally.

5WP is going to take a holiday from DX hunting. Bill put up a swell performance in the contest, but does not expect to be on the air now until the New Year. Bill says that being a secretary takes quite a lot of time, and does not leave much for DX. Help him, boys, by paying up your subs.

5YK has just put new rectifiers in his perk. 5LD has just finished rebuilding his 3-stage c.c. rig. How is the power supply getting on in the "rabbit hutch," OM? 5LG is still in VK3 with the YL's. Says he may be home about Christmas.

5AX. Alf. Traeger, of the Australian Inland Mission, has promised to give the members a lecture early in the New Year. 5RF sat for his "B" class the other day. What luck, OM? You have our good wishes.

5SL is interested in radio again, and has joined the Institute. Welcome, OM! Has also applied for a 200 m. permit. 5PB, of Naracoorte, has also joined the Institute. Nothing has been heard of 5FB and 5PK since they returned from their trip. Let's hear how you got on, OM's.

5WI is on the air quite a bit now, giving frequency checks. The perk is getting out well, too. Recently got a R9 report from VK2 on phone. The TDS has been working quite hard recently. The other Saturday afternoon a stunt was arranged in conjunction with 5CL-CK, but it had to be cancelled because of an interstate relay. It was intended to put a s.w. transmitter on one of the yachts at the opening of the Royal Yacht Squadron's season, broadcast a description of proceedings ashore, and then rebroadcast it through the National Stations. It is now proposed to take a perk up in an aeroplane over the city, and have the National Stations rebroadcast the proceedings from the plane.

The elementary lectures have again proved a great success. Harry Wheeler (5HW) is making an excellent job of the lectures, and it is not at all uncommon to see several of the chaps with their tickets along listening to him.

The Federal Executive are to be congratulated on having issued membership certificates to all financial members. This was a thing that the Institute had been lacking for years.

All eyes are now being turned towards the Convention to be held in VK7 on January 26, 28, and 29. It is expected that 5WP will represent VK5. 5GR is going over, too, and 5MD and 5RD are also thinking of making the trip. It looks as if there will be a real party from VK5.

The November general meeting was held on the 14th. Professor Kerr Grant, of the University of Adelaide, was to have given a lecture. Unfortunately, this had to be postponed for a week. There was a record crowd at the University the following week for the lecture. Professor Kerr Grant gave one of the most interesting and instructive lectures members have heard. The subject was "The Piezo-Electric Effect," and dealt with oscillating X-tals, with special reference to their luminous effects.

Special thanks are due to the Professor for the time he spent in preparing the lecture. Some of his assistants at the 'Varsity had been working for over two months preparing the apparatus used in the demonstrations.

As these are the last notes for 1934, I would like to take this opportunity, on behalf of all the Hams in VK5, to extend to our fellow-amateurs all over Australia the Season's Greetings. May amateur radio bind us together still more closely in 1935, in that feeling of good-fellowship that exists among all Hams.

73's, a Merry Christmas, and a Happy New Year from VK5.

VK6 NOTES BY 6CP.

At the monthly meeting for October, the best attendance we have had for some time resulted in a large amount of work being put in hand.

Cliff. Brown was responsible for the forming of a Social Committee, and, as leader, is doing great things. Already an outing has been arranged for November 18. A mixed party will enjoy a run in the hills looking for a hidden 10 mx. xmitter.

The Council recommended the sale of all surplus gear, and tenders are being called for same.

6RL reported that 6WI was almost completed, and the delay was caused through losing his mate, 6RX, who had gone to VK9 as operator at a big noise at Port Moresby.

6CP agreed to continue transmission of morse practice, the new sked being 11 a.m. Sundays.

At the conclusion of the meeting, 6SA spoke, and lectured on 10 mx. and 5 mx. rigs, much good being gathered by all concerned.

CALLS HEARD BY ZL 419.

(J Lunn, 67 Fox Street, Dunedin.)

Heard on 14MC, October 27 and 28.—VK2XU, 2DA, 2DZ, 2DL, 2HF, 2LZ, 2XV, 3BQ, 3HK, 3HT, 3MR, 3JQ, 3KR, 3JJ, 3HL, 4EI, 4BB, 5WJ, 6SA, 2WJ, 2IC.

WHAT VK6 HAMS ARE DOING!

The event of the year, the Centenary Test, produced only five starters, at least that was all I heard through the VK2 and 3. QRM "Just fancy trying to read an R3 Yank through 3MR!"

Honors of VK6 will go to 6SA, with about 16,000. A close go for second will be MN and FM, while CP will undoubtedly run fourth, with KB last. Val. struck a heap of trouble, and was only once able to get through a QSO during the whole contest.

CP decided at the last minute to go QRO? 25 watts. CP's impressions will be the subject of a special article and station description, which I hope "Amateur Radio" will find space for. Anyhow, we had a jolly good time using up the units.

Not much activity on the bands at present, but things are popping up a wee bit.

6SA is keeping watch on 10 mx. on Sunday mornings, and CP and MN putting all their junk together.

KB has had CX with him, chasing RF bugs in his xtal job, and has now cleaned up to the final PA.

Heard now and then are 6DH, KO, FO, RT, FM, HD, and, of course, MN. Most others are silent, while LK is supposed to be pounding up at Northam, but, so far, have never heard his sigs.

RL on 6WI, but not yet heard.

The students are all swotting for the January exam., and planning out their first xmitter.

VK3s and 2s are coming in with a thump in the early evenings on 40, and would just like to know why 3JL started to retune his rig after answering a VK6 CQ. The 6, in fact, went back, gave 3JL a hefty TG, RMAX report only to hear him messing about when the 6 went over. A wait of 10 minutes, during which time the carrier was still on, and then JL starts up CQ, DX. "Funny, but the 6 did not laugh!" Also, Easterners, your sigs. come through here on Sunday mornings at 9 a.m. local time, so keep a look out for VK6 for daylight QSO on 40.

6BN will surprise some day when he is heard on the ether.

CX doing his stuff, but Secretarial duties keep him busy.

Now, boys, let's hear you. Also your dope, and any item of interest.

VK7 (TASMANIAN) NOTES BY 7PA.

The meeting for November was held a week later than usual, owing to the Hon. Secretary being at the Centenary Convention, and to allow time for his return with first-hand information as to the doings in V.I.M. This meeting took place in the club-rooms on Tuesday night, November 13, with a fair attendance. After the general business was dispensed with, instead of a lecture, the Secretary gave a talk on his trip and business arising out of same, and we understand that he was given a fine time, too.

A letter was read at the meeting to the effect that the 1935 convention is to be held in Hobart, and we hope to be able to put on a show that will be in keeping with the Melbourne one of this November.

Every effort will be made to accommodate the visitors, and anyone intending to make the trip would be well advised to get their arrangements in hand early, as the gang here is only small. The date fixed for this event is about January 26, 27, and 28, 1935, and a comprehensive programme, with field day, etc., will he arranged.

Work on the bands is not very extensive at the moment, 40 being about the only one used, atmospherics have been bad on most occasions, and very few DX'ers logged.

7BJ was heard working a G on early a.m. of Friday, 16th.

7JH broke the ice with a KA1 recently.

7AR is to be heard with clean crystal signal.

7CW got his 40 meter rig going again, recently, but hasn't been heard at this QRA yet.

7KV has got an 800 for his final, and is having great fun, with plenty of T1 report.

7PA by some means contacted a W a few days ago, and, after working a second, the same night, hasn't raised one since. His rig seems to be perking O.K. at last.

On 200 meter 'phone, our usual Sunday crew do their stuff, and some good programmes go over at times. 7CW has been rebuilding his rig into an elaborate 'rack and panel assembly, and is also following with a resistance-coupled modulation system, I hear.

NORTHERN NOTES (VK7).

By VK7LZ and VK7CP.

The big event this month in the North is the field day to be held on November 25, and as it is the first held for many years it is being looked forward to very keenly, both by the Northern gang and by several BCL's that are taking part. It is proposed to use VK7JW's transmitter, and it is expected that about four car-loads of searchers will be on the look-out for the signals.

We welcome a newcomer to our ranks this month, in Mr. Fisher. Although he has only recently sat for his exam., Mr. Fisher, in company with VK7XL, was responsible for the construction of VK7DR. We hope to hear VK7DR on the air again shortly.

VK7AM hopes to come on the air soon with an E.C. osc. 46 doubler, and 210's in push-pull.

VK7BQ still entertains BCL's on 200 m.; has 620 records in his shack. Say's he can't vary his programme enough. Hi.

VK7CP building phone transmitter and trying suppressor grid modulation. The rig is portable, and CP has made a very neat job of it.

VK7JW experimenting with aerials; at present using a Collins system. Has turned his car into a portable radio station.

VK7XL, a newcomer in VK7, is working on 80 m. and 40 m., using a Hartley rig with a 2A3, 25 watts input.

VK7CK and VK7RC still do their share of CW work. By the way, Ron, how did you enjoy the Convention?

VK7LZ just finished an 80 m. phone rig. Has hopes of going on 200 m. shortly. Still does RAAFWR work on 80 m. with CW.

As the Northern Section covers a large district, we would be glad if members would send in reports on their activities. Very little is heard of the North-West Section, and it would help considerably if all were to send their notes along early to 7LZ or 7CP.

May I ask every member in the North to help us sell more copies of this little magazine? Show it to your radio friends, and then get them to send along a twelve months' sub. You know the cost, and it's worth it.

All district notes should be in the Magazine Secretary's hands on or before the 18th of the month.

R.A.A.F. Wireless Reserve Notes

VMB

Total No. of Messages 74

Average per Station 18.5

VMB 1

Total No. of Messages 43

Average per Station 14

2B3

Total No. of Messages 31

FEDERAL NOTES BY THE C.O

Activity in all districts was at a minimum during October and carried itself into November as members were recuperating from the effects of the Centenary Contest and Conventions, etc. It was very fortunate that H.Q. had the pleasure of a visit from 5Z1 and 7Z1 during that period. Now that things look like settling down again we may look forward and make plans for the coming new year. There is little of interest to report in the Federal notes this month so we can go ahead with the District notes.

SECOND DISTRICT NOTES BY 2Z3 D/D/C

The report this month must necessarily look sick owing to many reasons. 2Z1 is waiting sanction to pass the command over to 2Z3 and as soon as this is done it is hoped that training will pick up once again. However, with the fine weather coming on it will be hard to keep members up to the mark with watches! Why not equip ourselves with complete portables and conduct watches whether we be in the hills or surf? Traffic totals: 2A2 27, 2A4 2, 2A5 14, 2B3 31.

FOURTH DISTRICT NOTES BY 4Z1

Watches are being conducted at present on 7317 kcs at 0900 hours each Sunday. This frequency, at the present moment, is proving very satisfactory for general working with most stations in both sections. A slight increase in activity and traffic handled is noted over last month and it appears as though the score will be high each month as 4Z2 is active in connection with watches once again. 4B2 has been off during the 7317 kcs work owing to it clashing with his week end activities. 4B5 has shifted to Brisbane but as yet no permanent address, so he is not active as far as Reserve work goes. 4B3 recently paid a visit to 4B1 and spent some happy time chatting radio and Reserve. 4B1 anticipates having a transfer to N.W. Queensland after Xmas and is looking around for a motor driven power supply. 4A1 resumed watches recently as the morning seems to fit in better with other work. 4A2 is still off owing to no power supply.

Traffic totals: VMD 45, VMD1 17, VMD2 11, 4Z1 15, 4B1 7, 4A1 7, 4A4 5, 4B3 4, 4Z2 2, 4A6 1.

FIFTH DISTRICT NOTES BY 5Z1

Reserve schedules have been suspended lately due partly to inactivity and partly to the Victorian Centenary DX Contest. 5Z1 visited VMC during the Centenary Convention month and met 1A1, 3Z1 and and 7Z1 and quite a number of the VK3 hams and Reserve members. A visit was made to Laverton and it seemed quite marvellous the way 1A1 and 3Z1 took afternoons off ad lib.! Christmas Greeetings to all reserve members from VME and best wishes for the future of the reserve.

SIXTH DISTRICT NOTES BY 6Z1

The activities of the last two months have not been too brilliant but the announcement of an unofficial visit of 1A1 in a few months time will add the necessary incentive to bring things

up to scratch in the near future. 6Z1 had to discontinue the mid week watch on the 4000 kcs band owing to a punk BC set a few doors away, which has resulted in disorganisation of contact with certain distant members. 6A3 has been up to his eyes in work lately and radio had to take a back seat for a few weeks. 6Z2 has been working so hard, too, that he cannot manage to get up for the 0900 hour watch on Sundays! 6A1 and 6A5 are very active. 6A4 threatened to come on the air and make his debut to the ether. 6A2 sits for 1st grade commercial ticket in a few days time. Once that is over we will have him back on watch.

SEVENTH DISTRICT NOTES BY 7A1

Paucity of membership engenders difficulty in compiling any records of activities in this District. The membership at this time is but four, of whom one, 7Z1 is in Melbourne, whence we hope he will return with bigger and better plans for furtherance of Reserve work. For the remaining three, message totals are too low to record, but good work has been done in overcoming some of the intricacies of the second part of the training manual, which, one hears, causes 7A2 and 7A3 no little worry at times.

SPECIAL NOTE TO RESERVISTS

Notes of activities reaching this headquarters later than the 18th of the month will NOT be published in future.